

Guide to Products and Systems
For All Year Round Indoor Comfort

APPLIED
2018/19
EU





This document is dedicated to those looking for specialized advanced heating, air conditioning, air renewal and air purification solutions.

Solutions able to increase the comfort level in the places where we live, work and spend our free time.

Complete year round systems, focused on substantial energy savings and less dependency on the fossil fuels used by traditional HVAC solutions, such as natural gas or oil.

Clivet. Change Things

This Guide is printed every year and presents all Clivet's products with the aim of providing a basis for decisions and evaluations.

More detailed information, updated regularly, is available in the "SYSTEMS AND PRODUCTS" area at www.clivet.com, www.clivetlive.com and on Clivet Apps, where they can be downloaded free of charge.

Clivet. Change Things

HYDRONIC System

Hydronic systems with a full series of chillers and heat pumps for medium and large installations

PACKAGED System

Single-block air-conditioning systems for the services sector, extensive distribution and structures for medium and high crowding

PRIMARY AIR System

Fully stand-alone air renewal and purification systems for all applications (Dedicated Outdoor Air Systems)

WLHP System

Energy transfer loop-based systems for simultaneous heating and cooling requests for the services sector

TERMINAL Units and AHU

The series of terminal units and air handling units for every application

AUXILIARY Systems

Split systems, stand-alone air conditioners and remote condensers

INDEX

Always ready for the Future

40

agencies in Italy

650

employees in Italy
and abroad

70

countries we export to

50.000 m²

of plants in Feltre,
Belluno - Italy

6

branches: Great Britain, Germany, Spain,
Russia, UAE, India



For over 25 years, we have been offering solutions to ensure sustainable comfort and the well-being of people and the environment

In over 25 years of working on the design, manufacturing and distribution of air conditioning and handling systems, combining high efficiency with minimal environmental impact, Clivet has developed solutions to ensure sustainable comfort and the well-being of people and the environment. Designing and developing year-round air conditioning solutions with innovative technologies are part of Clivet's DNA, which means the company has always been ready for the future.

Clivet. Change things

2016

A Group Company of



2015

Clivet Live is born

130

service centres

24.060 \$M

Midea sales in 2017



Our values
in the residential,
commercial and industrial
sectors

Increasing comfort, saving energy and providing customers with the best value for the entire life cycle of the system: these are the values that inspire our systems for the residential, services and industrial sectors.



Residential



Space
load



Simultaneous
cooling and heating



Outdoor air
thermal load



Sanitary
hot water

Offices



Space
load



Simultaneous
cooling and heating

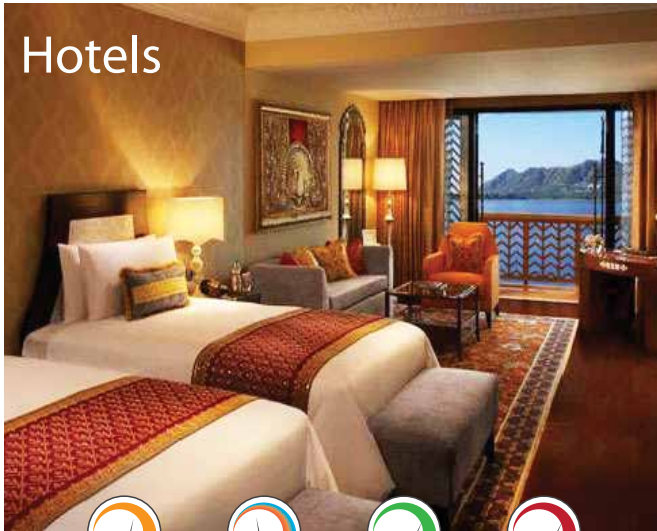


Outdoor air
thermal load



Sanitary
hot water

Hotels



Space
load



Simultaneous
cooling and heating

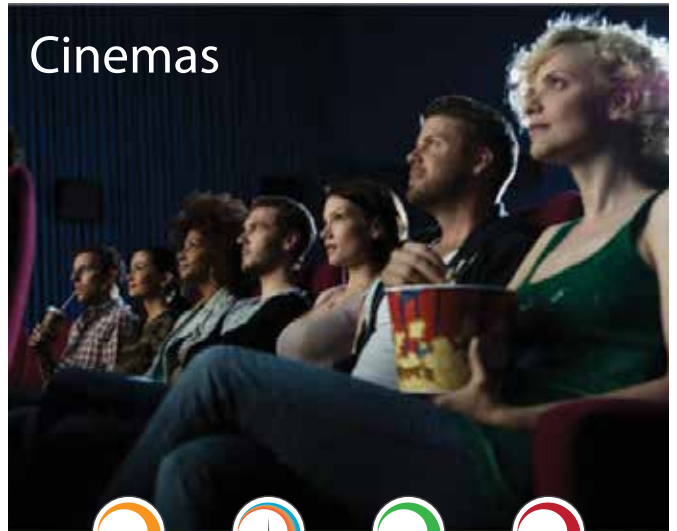


Outdoor air
thermal load



Sanitary
hot water

Cinemas



Space
load



Simultaneous
cooling and heating



Outdoor air
thermal load



Sanitary
hot water

Specialised systems
for any application
and climate

Today, buildings have to deliver an elevated and constant standard of well-being, regardless of the outside conditions.

Not all buildings are alike: depending on their use, there are considerable differences in terms of load intensity, simultaneous requests for hot and chilled water, domestic hot water production and air renewal.

That is why Clivet has created a series of specialised system solutions for applications that meet the specific needs of different buildings by optimising the overall efficiency in relation to traditional systems (boiler, chiller, AHU).

Clivet's specialised systems simplify the design and installation work, improve the control of the entire system, reduce the environmental impact and, at the same time, optimise the initial investment, reduce running costs, increasing the building's energy rating and therefore its value on the market.

Public buildings



Space load



Simultaneous cooling and heating



Outdoor air thermal load



Sanitary hot water

Shopping centres



Space load



Simultaneous cooling and heating



Outdoor air thermal load



Sanitary hot water

Hospitals



Space load



Simultaneous cooling and heating



Outdoor air thermal load



Sanitary hot water

Industry



Space load



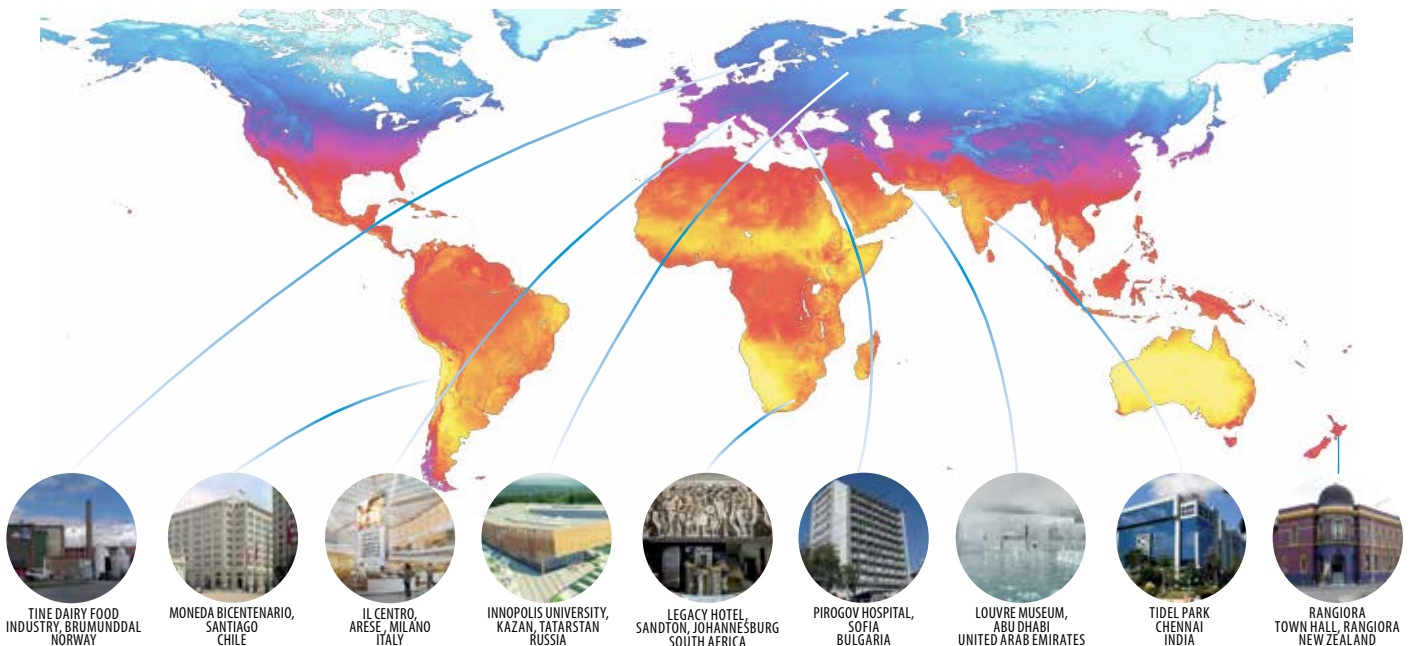
Simultaneous cooling and heating

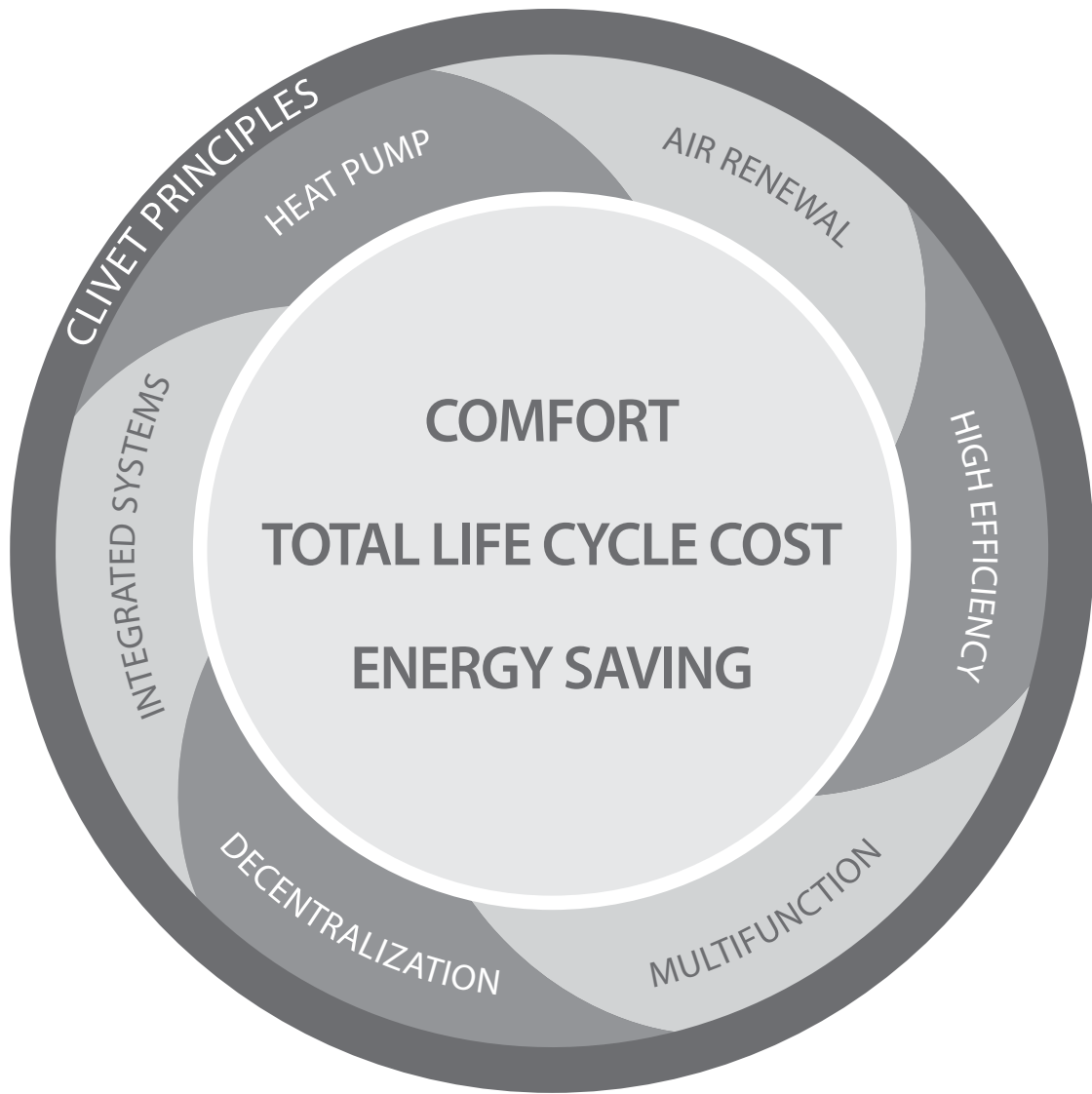


Outdoor air thermal load



Sanitary hot water





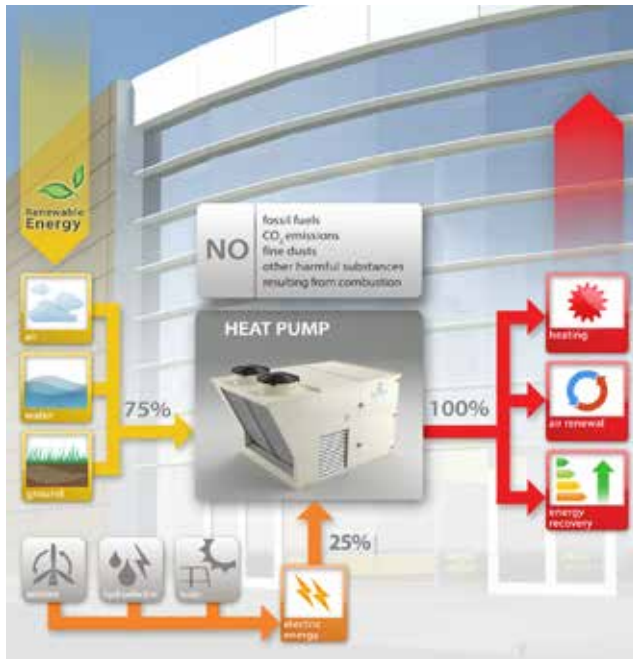
Clivet principles for the building evaluation

All Clivet systems are based on six key principles that make Clivet's products and systems unique.

These principles are the basis for making application-specific systems, which have always been part of Clivet's DNA.

They represent the foundation on which Clivet has built its new way of looking at systems, thereby becoming the reference for sustainable systems of the future.

Heat pump technology



Heat pumps are the technology of the future since they are significantly more efficient than traditional combustion systems:

- **Reductions of 50% in Primary Energy, CO₂ and Running Costs**
- **Extensive use of Renewable Energy**

Thanks to heat pumps, Clivet's systems guarantee:

- A single system for both heating and cooling
- Controlled mechanical ventilation with innovative thermodynamic recovery
- Free production of domestic hot water in summer
- Simultaneous heating and cooling to fulfil simultaneous loads

Importance of air renewal



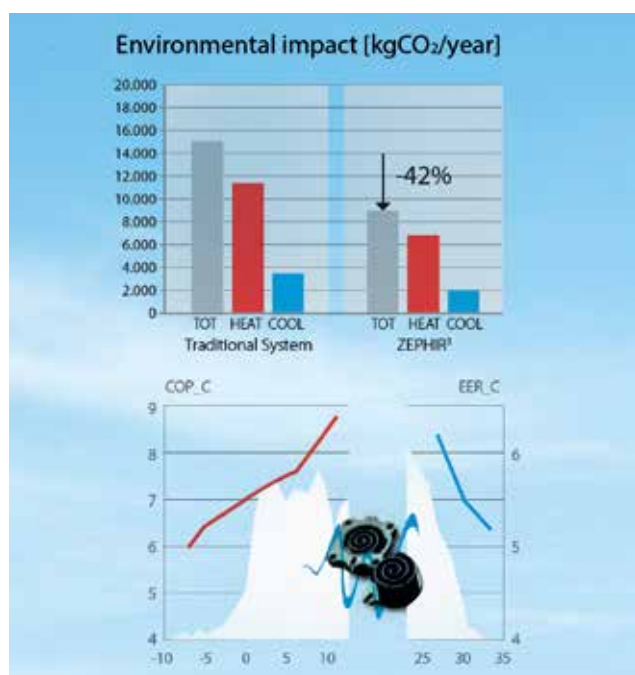
The quality of air inside modern airtight buildings is undermined by a number of pollutants.

The controlled mechanical ventilation system is essential to creating a more liveable environment.

Clivet's stand-alone system with thermodynamic energy recovery dedicated to ventilation has the following benefits:

- It recovers energy both in winter and in summer
- Reduces the load of outdoor air with a more efficient system and provides more energy for the rooms
- Reduces the capacity of the main generators by limiting their operation to seasonal peaks
- Dehumidifies in summer

High Seasonal efficiency



ZEPHIR³, Office Building in London, case study

Seasonal efficiency ensures the best way of understanding how energy is used when choosing the system to ensure year-round comfort. Every application has different needs which vary depending on multiple factors, including different indoor and outdoor climatic conditions, crowding and thermal loads.

Clivet makes systems designed to meet the specific needs of every single application, thereby optimising the use of the system's resources to reach top seasonal efficiency levels thanks to:

- One systematic solution
- Use of the most favourable resources
- Full control over the system
- Continuous capacity modulation

Multifunction



Clivet's multifunction systems include all the functions to ensure year-round comfort. They optimise the solution based on the needs of the various applications and integrate it in specialised products and in complete dedicated systems:

- Heating
- Cooling
- Domestic hot water
- Air renewal and purification
- Dehumidification

Decentralization



Example of floor-based decentralisation

In developing Clivet products and systems one aspect that was given great attention was how to rationalise the choices in terms of design and construction, which could affect the system's running costs and environmental impact for its entire life cycle.

Many years ago, Clivet successfully developed the principle of generating energy as close as possible to where it needs to be used:

- Modular systems that are active only where and when required
- Reduction or complete elimination of auxiliary consumption (for instance, pumping energy)
- Stand-alone system
- Easy to maintain and handle
- Adapts to the needs of the system

Integrated systems



Clivet designs its systems by integrating all the services required for each application.

The system's elements, optimised and industrially processed to work together, guarantee the highest efficiency and reliability.

- Simplified design and installation
- Lower investment costs
- Quality of the systems
- Guaranteed performance



Clivet combines the best technology with an excellent product quality and performance certification system

The innovation for which Clivet has always stood out, is supported by an industrial framework that has adopted the standards envisaged by ISO 9001, since 1996, guaranteeing a quality management system designed to control company processes so that they are targeted at improving the efficacy and efficiency of the organisation, as well as at client satisfaction.

Clivet uses latest generation sheet metal folding, press and cutting machines for the mechanical production of its components. High product quality standards are also guaranteed by the use of patented electronic controls.

Clivet only uses non-toxic and low environmental impact alloys for soldering, insulation and gases that comply with the strictest European standards, and the best components available on the market.

Clivet products comply with applicable product directives, as required in all EU countries, in order to guarantee an appropriate level of safety.



The wide range of Clivet products and complete systems comply with the requirements of the implementing measures for Directives 2009/125/EC (ErP-Energy related Products) and 2010/30/EU (Energy labelling), whose purpose is to reduce the energy consumption of products for heating, cooling, ventilation and hot water production, encouraging the user towards energy-efficient choices. Directives 2009/125/EC (ErP) and 2010/30/EU (ELD) include the following Regulations: (EU) 206/2012, (EU)626/2011; (EU) 811/2013, (EU) 813/2013; (EU) 1253/2014, (EU) 1254/2014; (EU) 2016/2281.



Clivet participates in the EUROVENT "Liquid Chilling Packages and Heat Pumps", "Rooftops" and "Air Handling Units" Certification programmes. The products concerned feature in the EUROVENT guide to certified products and on the website www.eurovent-certification.com. The programmes apply to water chillers up to 1500 kW, to rooftops up to 100 kW and to air handling units.



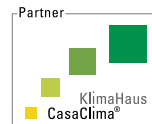
With the aim of providing Customer satisfaction, Clivet S.p.A. has supplemented and certified its Quality, Environment and Safety Management Systems, in accordance with the ISO 9001, ISO 14001 and OHSAS 18001 International Standards.



Clivet is committed in promoting the green building principles and has become a member of GBC Italia. This organization collaborates with USGBC, the U.S. nonprofit organization that promotes worldwide the LEED® system of independent certification.

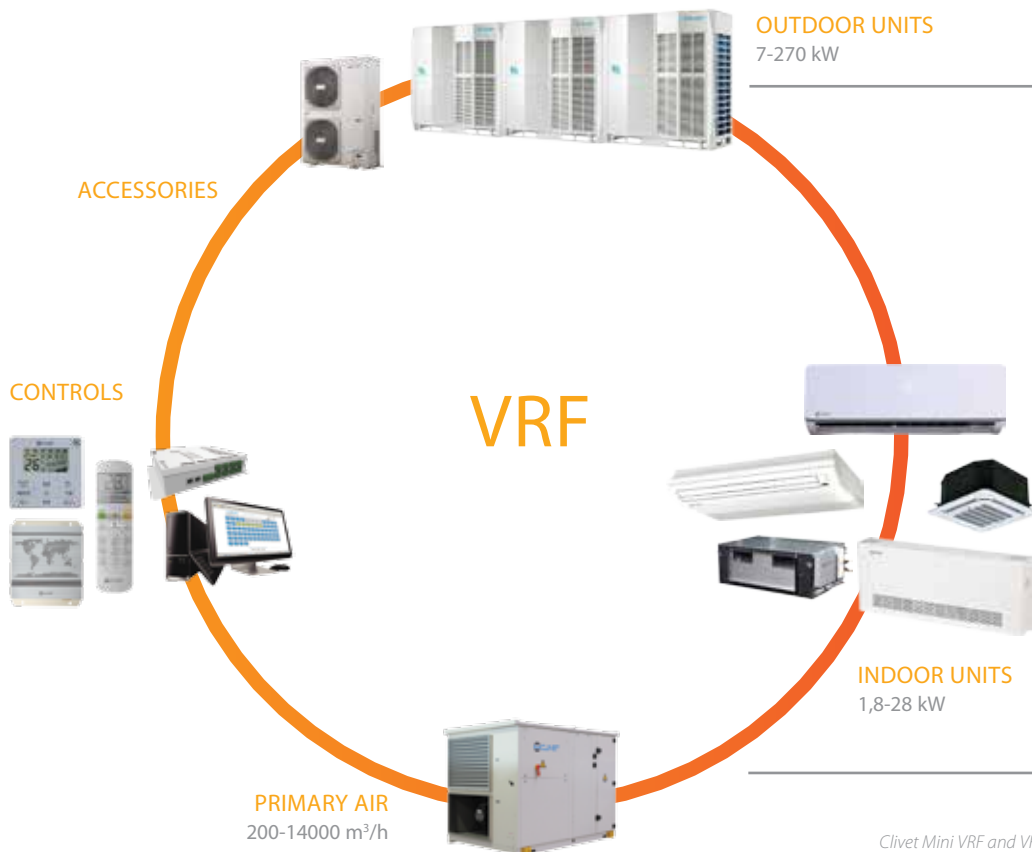
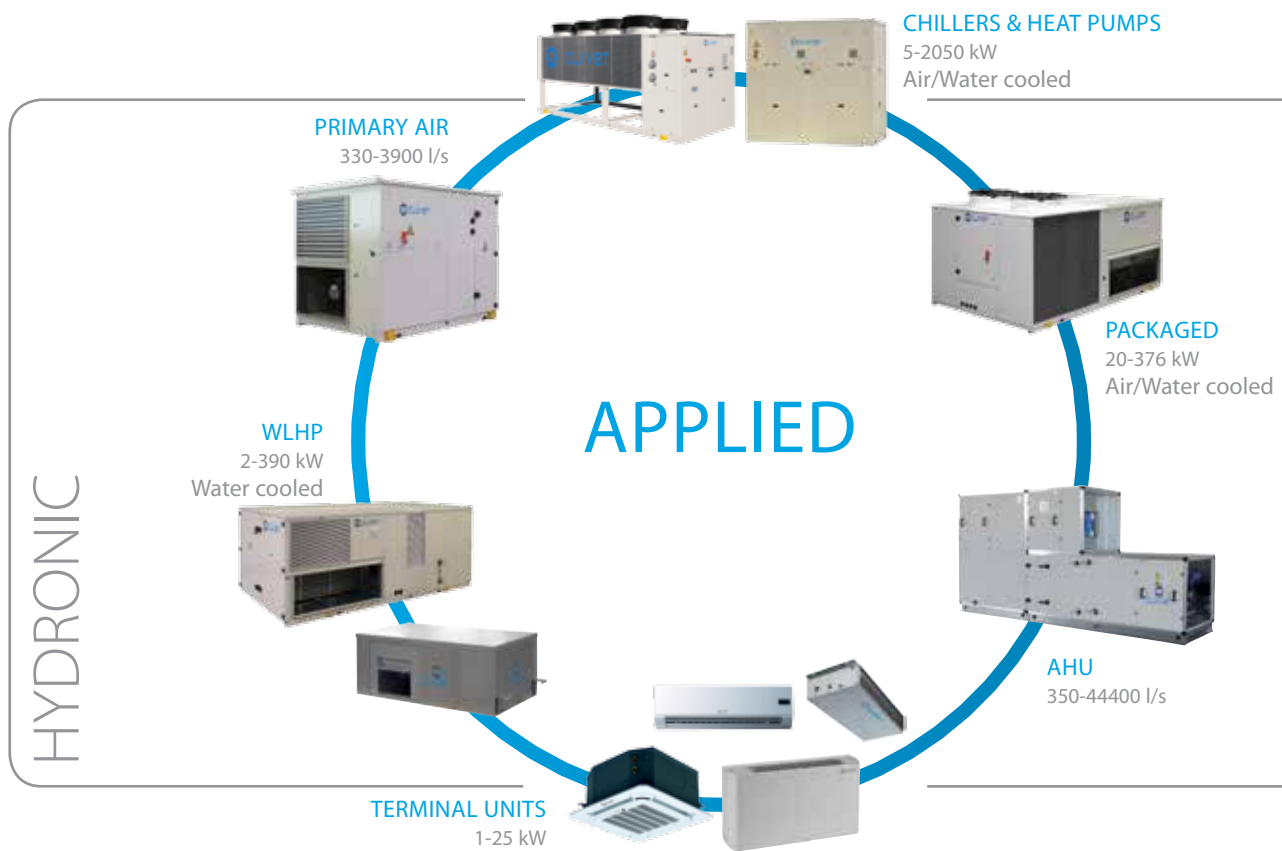


In 2015, Clivet became a partner of CasaClima. As a result, Clivet is now part of a network of companies renowned for their technical expertise and constant focus on sustainable home management.

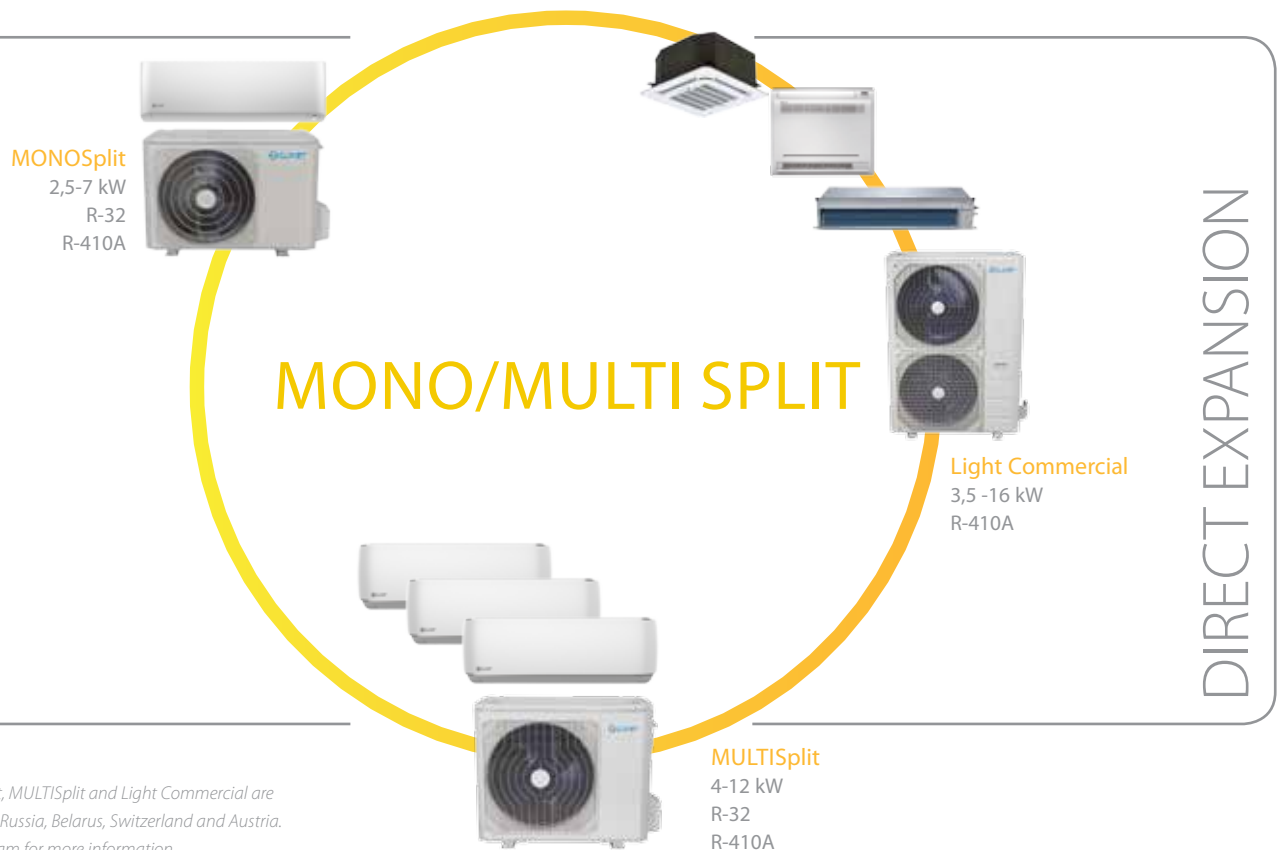


All technologies for a complete proposal

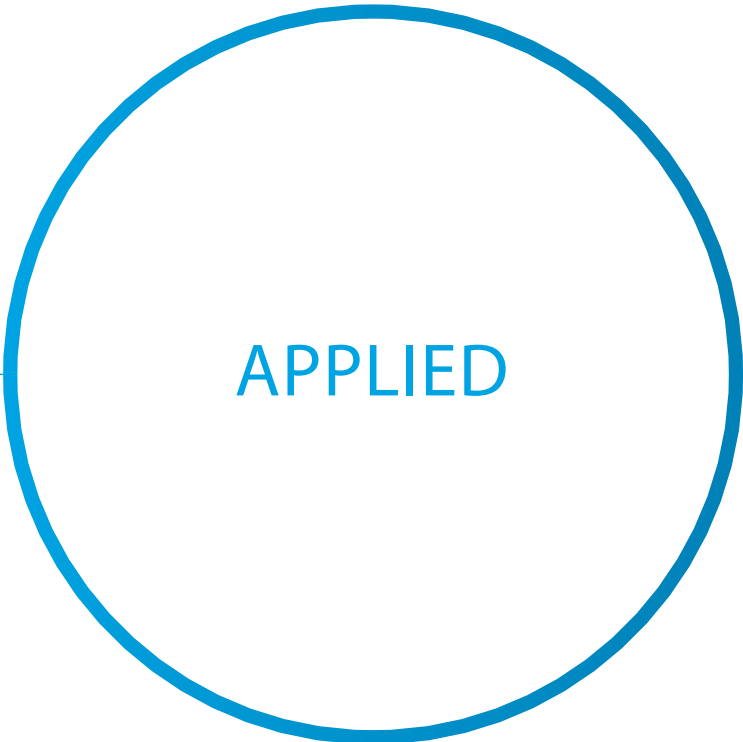
Heating, cooling, air renewal and domestic hot water production



Clivet Mini VRF and VRF Systems are available in Italy, Germany, Russia, Belarus, Switzerland and Austria. Please ask our Team for more information.

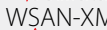
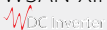
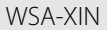
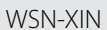


Clivet MONOSplit, MULTISplit and Light Commercial are available in Italy, Russia, Belarus, Switzerland and Austria. Please ask our Team for more information.



APPLIED

HYDRONIC System - Air Source

	Small and Medium Commercial		
			
	ELFOEnergy Edge / Sheen ELFOEnergy Extended Inverter ELFOEnergy Duct Inverter	ELFOEnergy Medium / Large ² ELFOEnergy Vulcan Medium ELFOEnergy Duct Medium	ELFOEnergy Magnum
Capacity (A35/W7)	4 ÷ 55 kW	20 ÷ 216 kW	50 ÷ 354 kW
ErP compliance (heat pumps only)			
Products	 	 	  
 Chillers	WSAT-XIN  	WSAT-XEE 	WSAT-XIN   WSAT-XEM 
 High Temperature Chillers External Air			WSAT-XEM 
 Free Cooling Chillers		WSAT-XEE FC 	
 Heat pumps	WSA-XIN   WSA-XMi   WSA-XSi  	WSA-XEE 	WSA-XIN   WSA-XEM 
 High temperature water Heat pumps		WBAN 	WSA-XEM HW 
 Multi-function Heat pumps			WSA-XIN MF   WSA-XEM MF 
 Ducted units	WSA-XIN   WSN-XIN  	WSA-XEE  WSN-XEE 	



Inverter Scroll Compressor, Refrigerant R-410A



Scroll Compressors, Refrigerant R-410A



Screw Compressors, Refrigerant R-134a

Large Commercial and Industry



Remotex Multi Scroll Technology	SPINchiller ³ / SPINchiller ² Duct Multi Scroll Technology	SCREWLine ³
237 ÷ 2050 kW	115 ÷ 1350 kW	484 ÷ 1523 kW
MSRT-XSC3 EXC A PRM C	WSAT-XSC3 A C	WDAT-SL3 WDAT-iL3 W _{seer} Inverter EXC A C
MSRT-XSC3 EXC A	WSAT-XSC3 EXC A	WDAT-SL3 EXC A
	WSAT-XSC3 FC EXC A	WDAT-SL3 FC EXC A
	WSAN-XSC3 EXC A	
	WSAN-XSC3 MF EXC A	
	WSA-XSC2 (Chiller) A	



Inverter Screw Compressors, Refrigerant R-134a



Eurovent Efficiency Energy Class

HYDRONIC System - Water Source

	Small and Medium Commercial	
		
	ELFOEnergy Ground	ELFOEnergy Ground Medium ²
Capacities (A35/W7)	6 ÷ 33 kW	29 ÷ 356 kW
ErP compliance (heat pumps only)		
Products	 	 
 Chillers		WSH-XEE2 
 Heat pumps with inversion on the water circuit		WSH-XEE2 
 Heat pumps with inversion on the refrigeration circuit	WSHN-EE 	WSHN-XEE2 
 Multi-function heat pump		WSHN-XEE2 MF 
 Condenserless units		



Scroll Compressor, Refrigerant R-410A



Tandem Scroll Compressors, Refrigerant R-410A



Screw Compressors, Refrigerant R-134a

Large Commercial and Industry

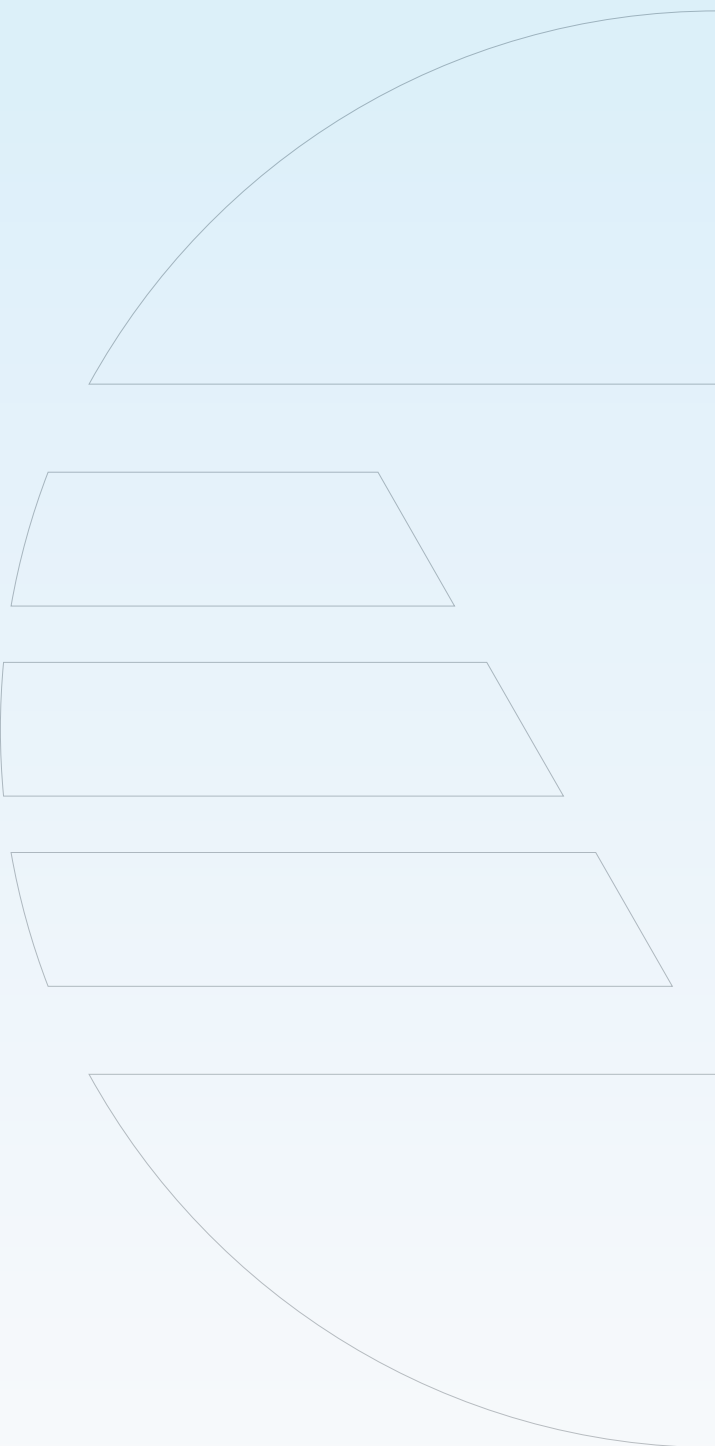


HYDRONIC

SPINchiller ³ Multi Scroll Technology		SCREWLine ³	
210 ÷ 730 kW		300 ÷ 1430 kW	
		-	
 		 	
WSH-XSC3			
WSH-XSC3			
WSHN-XSC3			
		MDE-SL3	



Eurovent Efficiency Energy Class



HYDRONIC System

System components

series	size from	to	name	page
Water chillers and Heat pumps - air source - axial fans				
WSAT-XIN / WSAN-XIN	81	171	ELFOEnergy Extended Inverter	24
WSAN-XMi	21	81	ELFOEnergy Edge	28
WSAN-XSi	10.1	22.2	ELFOEnergy Sheen	30
WSAT-XEE / WSAN-XEE	82	302	ELFOEnergy Medium	32
WSAT-XEE / WSAN-XEE	352	802	ELFOEnergy Large ²	34
WBAN	82	302	ELFOEnergy Vulcan Medium	38
WSAT-XIN / WSAN-XIN	18.2	45.2	ELFOEnergy Magnum	40
WSAT-XEM / WSAN-XEM	50.4	120.4	ELFOEnergy Magnum	42
WSAN-XIN MF	18.2	45.2	ELFOEnergy Magnum MF	44
WSAN-XEM MF	50.4	120.4	ELFOEnergy Magnum MF	46
WSAN-XEM HW	35.4	60.4	ELFOEnergy Magnum HW	48
WSAT-XSC3 / WSAN-XSC3	90.4	480.8	SPINchiller ³	50
WSAN-XSC3 MF	90.4	480.8	SPINchiller ³ MF	54
WSAT-XSC3 FC	90.4	360.6	SPINchiller ³ FC	58
MSRT-XSC3+CEV-XT	90.4	T240.4	Remotex	60
WDAT-SL3	200.2	580.2	SCREWLine ³	64
WDAT-iL3	250.2	580.2	SCREWLine ³	66
WDAT-SL3 FC	200.2	580.2	SCREWLine ³ FC	68
Water chillers and Heat pumps - air source - centrifugal fans				
WSA-XIN / WSN-XIN	81	141	ELFOEnergy Duct Inverter	70
WSA-XEE / WSN-XEE	122	402	ELFOEnergy Duct Medium	72
WSA-XSC2	432	110D	SPINchiller ² Duct	74
Water chillers and Heat pumps - water source				
WSHN-EE	17	121	ELFOEnergy Ground	76
WSH-XEE2 / WSHN-XEE2	10.2	120.2	ELFOEnergy Ground Medium ²	78
WSHN-XEE2 MF	10.2	120.2	ELFOEnergy Ground Medium ² MF	80
Ground Medium Infinity Modular	-	-	-	82
WSH-XSC3/WSHN-XSC3	70.4	240.4	SPINchiller ³	84
Condenserless water chillers - air source				
MSE-SC	65D	180F	SPINchiller	88
MDE-SL3	120.1	580.2	SCREWLine ³	90

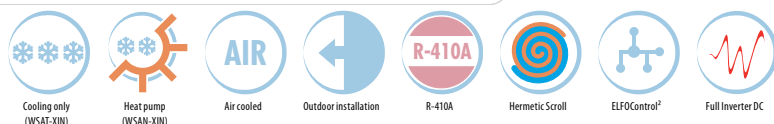
Water chiller

WSAT-XIN: cooling only
WSAN-XIN: reversible heat pump
Air cooled
Outdoor installation
Capacity from 15,4 to 49,2 kW

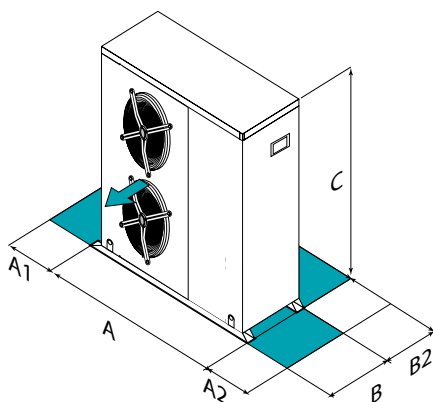
DC Inverter



functions and features



dimensions and clearances



CAUTION!For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

ELFOEnergy Extended Inverter

- **SEASONAL EFFICIENCY:** Guaranteed by DC Inverter technology applied to the compressor, which can modulate its speed to the energy needs required. This solution allows a further reduction in consumption and a significant improvement of the seasonal efficiency.
- **ADVANCED TECHNOLOGY:** Clivet's continuous improving has allowed to realize ELFOEnergy Extended Inverter with special design features: Hydrophilic battery for a guarantee of efficiency in all conditions, electronic expansion valve to optimize the operation of the cooling circuit with DC inverter compressor, water kit to simplify the hydronic circuit and make it easier to maintain. The unit can be equipped with a DC Inverter circulator (optional), providing further energy savings through the modulation of water flow depending on the building thermal load and pressure drop.
- **MAXIMUM SILENCE:** ELFOEnergy Extended Inverter is at the top of its class, thanks to the optimized profile of the fan, and through the modulation of the fan and compressor depending on the external conditions and building thermal load.
- **COMPACT SIZE:** The continued research in product industrialization, has allowed to realize a very compact unit, a decisive factor to meet the requirements of flexibility to suit the characteristics of each building.

Size – WSAT-XIN			81	91	101	121	131	141	151	161	171
EXC	A - Length	mm	1731	1731	1731	1731	1341	1341	1341	1341	1341
EXC	B - Width	mm	724	724	724	724	1159	1159	1159	1146	1146
EXC	C - Height	mm	1137	1137	1137	1517	1520	1520	1520	1770	1770
EXC	A1	mm	400	400	400	400	1000	1000	1000	1000	1000
EXC	A2	mm	600	600	600	600	1000	1000	1000	1000	1000
EXC	B2	mm	400	400	400	400	1000	1000	1000	1000	1000
EXC	Operating weight	kg	230	230	230	300	290	300	320	390	390

Size – WSAT-XIN			81	91	101	121	131	141
PRM	A - Length	mm	1731	1731	1731	1731	1341	1341
PRM	B - Width	mm	724	724	724	724	724	724
PRM	C - Height	mm	1137	1137	1137	1517	1517	1517
PRM	A1	mm	400	400	400	400	400	400
PRM	A2	mm	600	600	600	600	600	600
PRM	B2	mm	400	400	400	400	400	400
PRM	Operating weight	kg	230	230	230	300	300	300

Size – WSAN-XIN			81	91	101	121	131	141	151	161	171
EXC	A - Length	mm	1731	1731	1731	1731	1341	1341	1341	1341	1341
EXC	B - Width	mm	724	724	724	724	1159	1159	1159	1146	1146
EXC	C - Height	mm	1137	1137	1137	1517	1520	1520	1520	1770	1770
EXC	A1	mm	400	400	400	400	1000	1000	1000	1000	1000
EXC	A2	mm	600	600	600	600	1000	1000	1000	1000	1000
EXC	B2	mm	400	400	400	400	1000	1000	1000	1000	1000
EXC	Operating weight	kg	240	240	240	310	300	310	330	400	400

Size – WSAN-XIN			81	91	101	121	131	141
PRM	A - Length	mm	1731	1731	1731	1731	1341	1341
PRM	B - Width	mm	724	724	724	724	724	724
PRM	C - Height	mm	1137	1137	1137	1517	1517	1517
PRM	A1	mm	400	400	400	400	400	400
PRM	A2	mm	600	600	600	600	600	600
PRM	B2	mm	400	400	400	400	400	400
PRM	Operating weight	kg	240	240	240	310	310	310

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

PRM Premium EXC Excellence

versions and configurations

VERSION:

- **PRM** Premium (sizes 81÷141 only, Standard)
- **EXC** Excellence

VOLTAGE:

- **400TN** Supply voltage 400/3/50+N

technical data

Size – WSAT-XIN				81	91	101	121	131	141	151	161	171
EXC	► Cooling capacity (EN14511:2013)	(1)	kW	15,5	17,4	19,6	25,3	26,8	32,4	36,4	43,2	48,1
EXC	Total power input (EN14511:2013)	(1)	kW	5,18	6,26	7,83	8,69	8,56	10,2	12,2	14,4	16,4
EXC	EER (EN 14511:2013)	(1)	-	2,99	2,78	2,50	2,91	3,13	3,18	2,99	3,00	2,93
EXC	SEER	(4)	-	5,62	5,26	4,49	5,65	6,15	5,83	5,94	5,61	5,66
EXC	Refrigeration circuits		Nr	1								
EXC	No. of compressors		Nr	1								
EXC	Type of compressors		-	SCROLL INVERTER								
EXC	Standard airflow		l/s	2222	2306	2444	2778	4694	4694	5139	5649	5833
EXC	Water flow-rate (User Side)		l/s	0,74	0,83	0,94	1,21	1,28	1,55	1,74	2,06	2,30
EXC	Useful pump discharge head		kPa	64	62	58	72	124	122	112	98	83
EXC	Standard power supply		V	400/3/50+N								
EXC	Sound pressure level	(3)	dB(A)	56	56	57	55	63	69	70	73	73
Size – WSAT-XIN				81	91	101	121	131	141	151	161	171
PRM	► Cooling capacity (EN14511:2013)	(1)	kW	15,5	17,5	19,6	25,3	27,8	30,6			
PRM	Total power input (EN14511:2013)	(1)	kW	5,53	6,53	8,03	9,57	10,8	12,8			
PRM	EER (EN 14511:2013)	(1)	-	2,81	2,68	2,44	2,64	2,58	2,38			
PRM	SEER	(4)	-	4,55	4,58	4,21	4,23	4,31	4,32			
PRM	Refrigeration circuits		Nr	1								
PRM	No. of compressors		Nr	1								
PRM	Type of compressors		-	SCROLL INVERTER								
PRM	Standard airflow		l/s	2167	2389	2444	3333	3889	4167			
PRM	Water flow-rate (User Side)		l/s	0,74	0,84	0,94	1,21	1,33	1,46			
PRM	Useful pump discharge head		kPa	77	73	69	70	65	58			
PRM	Standard power supply		V	400/3/50+N								
PRM	Sound pressure level	(3)	dB(A)	56	56	57	55	56	57			
Size – WSA-XIN				81	91	101	121	131	141	151	161	171
EXC	► Cooling capacity (EN14511:2013)	(1)	kW	15,4	16,8	19,4	24,1	28,2	32,5	38,2	43,6	49,2
EXC	Total power input (EN14511:2013)	(1)	kW	5,52	6,06	8,15	9,41	10,3	12,2	14,4	16,2	19,1
EXC	EER (EN 14511:2013)	(1)	-	2,79	2,77	2,38	2,56	2,74	2,67	2,66	2,69	2,58
EXC	SEER	(4)	-	4,87	4,81	4,19	4,76	5,69	5,39	5,17	5,34	5,22
EXC	► Heating capacity (EN14511:2013)	(2)	kW	16,2	18,6	20,5	25,8	27,2	31,9	36,7	43,0	49,3
EXC	Total power input (EN14511:2013)	(2)	kW	5,05	5,92	7,00	8,04	8,58	9,88	11,5	13,6	15,7
EXC	COP (EN 14511:2013)	(2)	-	3,21	3,14	2,93	3,21	3,17	3,23	3,20	3,17	3,14
EXC	Refrigeration circuits		Nr	1								
EXC	No. of compressors		Nr	1								
EXC	Type of compressors		-	SCROLL INVERTER								
EXC	Standard airflow		l/s	2222	2306	2444	2778	4694	4694	5648	6672	6861
EXC	Water flow-rate (User Side)		l/s	0,74	0,80	0,93	1,15	1,35	1,55	1,83	2,08	2,35
EXC	Useful pump discharge head		kPa	64	62	58	74	118	122	107	97	79
EXC	Standard power supply		V	400/3/50+N								
EXC	Sound pressure level	(3)	dB(A)	56	56	57	55	63	69	70	73	73
Directive ErP (Energy Related Products)												
EXC	ErP Energy Class - AVERAGE Climate - W35			A++	A+	A+	A++	A+	A+	A+	A+	A+
EXC	ErP Energy Class - AVERAGE Climate - W55			A++	A++	A+	A++	A+	-	-	-	-
EXC	SCOP - AVERAGE Climate - W35	(4)	-	3,93	3,73	3,65	3,89	3,21	3,21	3,20	3,21	3,22
EXC	SCOP - AVERAGE Climate - W55	(4)	-	3,40	3,34	3,11	3,38	2,83	-	-	-	-
Size – WSA-XIN				81	91	101	121	131	141	151	161	171
PRM	► Cooling capacity (EN14511:2013)	(1)	kW	15,5	16,8	19,5	24,0	26,6	29,1			
PRM	Total power input (EN14511:2013)	(1)	kW	5,92	6,36	8,37	10,3	11,5	13,3			
PRM	EER (EN 14511:2013)	(1)	-	2,62	2,64	2,33	2,33	2,32	2,18			
PRM	SEER	(4)	-	3,99	4,12	3,94	3,65	3,78	3,83			
PRM	► Heating capacity (EN14511:2013)	(2)	kW	16,2	18,5	20,4	25,8	28,2	31,5			
PRM	Total power input (EN14511:2013)	(2)	kW	5,44	6,23	7,16	8,93	9,79	11,4			
PRM	COP (EN 14511:2013)	(2)	-	2,98	2,97	2,85	2,89	2,88	2,77			
PRM	Refrigeration circuits		Nr	1								
PRM	No. of compressors		Nr	1								
PRM	Type of compressors		-	SCROLL INVERTER								
PRM	Standard airflow		l/s	2222	2306	2444	2778	3056	3172			
PRM	Water flow-rate (User Side)		l/s	0,74	0,80	0,93	1,15	1,27	1,39			
PRM	Useful pump discharge head		kPa	77	75	70	73	68	62			
PRM	Standard power supply		V	400/3/50+N								
PRM	Sound pressure level	(3)	dB(A)	56	56	57	55	56	57			
Directive ErP (Energy Related Products)												
PRM	ErP Energy Class - AVERAGE Climate - W35			A+	A+	A+	A+	A+	A+			
PRM	ErP Energy Class - AVERAGE Climate - W55			A+	A+	A+	A+	A+	A+			
PRM	SCOP - AVERAGE Climate - W35	(4)	-	3,56	3,66	3,72	3,26	3,62	3,59			
PRM	SCOP - AVERAGE Climate - W55	(4)	-	2,84	2,92	2,89	2,82	2,84	2,83			

Notes

- (1) Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: Internal exchanger water temperature = 12/7°C; Entering external exchanger air temperature = 35°C
- (2) Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: Internal exchanger water temperature = 40/45°C. External exchanger air temperature 7 D.B./6 (°C) W.B.
- (3) The sound levels refer to the unit at full load, in the rated test conditions. The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature 35°C
- (4) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

PRM Premium
EXC Excellence

accessories

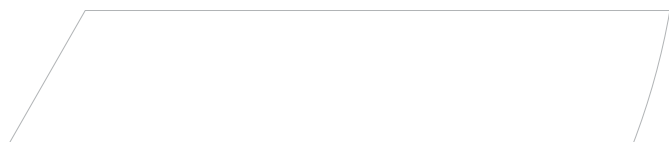
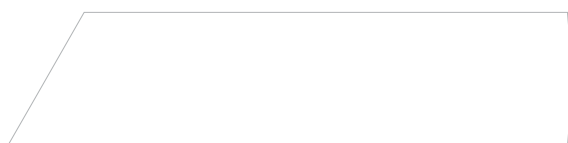
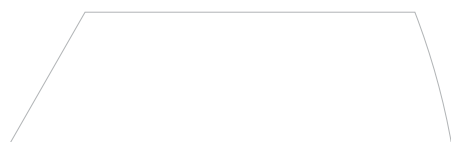
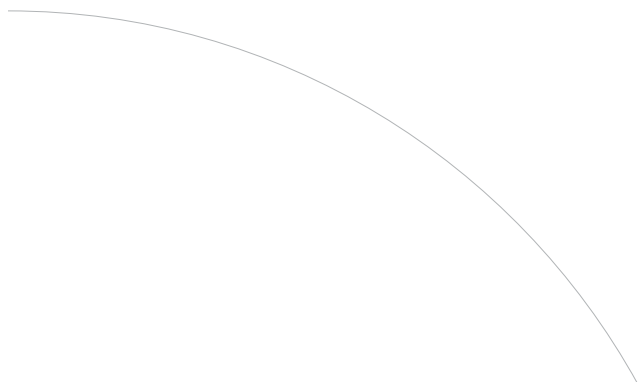
- ▶ **AMRX** Rubber antivibration mounts
- ▶ **HEDIF** Diffuser for high efficiency axial fan (sizes 131÷171)
- ▶ **RCTX** Remote control
- ▶ **CMSC2X** Serial communication module with RS485 serial converter kit
- ▶ **KSAX** 100-litre circuit breaker
- ▶ **PGFCX** Finned coil protection grill (sizes 131÷171)
- ▶ **KTFLX** Hose kit for connection to the chiller/heat pump.
- ▶ **KG4UPX** Management kit up to 4 units in parallel by the two set point available for each unit

WSAN-XIN only:

- ▶ **CMACSX** Domestic hot water module
- ▶ **ACS500X** 500-litre domestic hot water storage tank (sizes 81÷101)
- ▶ **ACS55X** 500-litre domestic hot water storage tank with solar coil (sizes 81÷101)
- ▶ **3DHWX** Three-way valve for domestic hot water

Key to symbols:

- Accessories separately supplied



Reversible heat pump

Air cooled

Outdoor installation

Capacity from 4,65 to 15,3 kW

ELFOEnergy Edge

DC Inverter



► **SEASONAL EFFICIENCY:** Guaranteed by DC Inverter technology applied to the compressor and fans, which can modulate its speed to the energy needs required. This solution allows a further reduction in consumption and a significant improvement of the seasonal efficiency.

► **ADVANCED TECHNOLOGY:** Clivet's continuous improving has allowed to realize ELFOEnergy Edge with special design features: Hydrophilic battery for a guarantee of efficiency in all conditions, electronic expansion valve to optimize the operation of the cooling circuit with DC inverter compressor and fans. The unit can be equipped with a standard DC Inverter circulator, providing further energy savings through the modulation of water flow depending on the building thermal load and pressure drop.

► **EXTENDED OPERATING RANGE:** ELFOEnergy Edge is able to meet the strictest requirements in terms of operating temperatures, with great efficiency. In cooling, its operation is guaranteed even with very low outside temperatures (from 46°C to -5°C), ideal for the requirements of IT applications. In heating, its operation is guaranteed down to external air temperatures of -20°C producing hot water of up to 60°C.

► **DOMESTIC HOT WATER ALL YEAR ROUND:** ELFOEnergy Edge is able to produce domestic hot water at 60°C both in winter with outdoor temperatures down to -20°C and in summer with outdoor temperatures up to 43°C



Unit listed on
www.eurovent-certification.com



ErP compliant

functions and features



Heat pump



Air cooled



Outdoor installation



R-410A



Hermetic Scroll

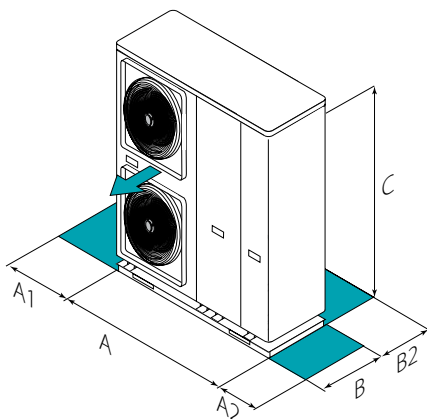


Full Inverter DC



Electronic expansion valve

dimensions and clearances



Size - WSAN-XMi		21	31	41	51	61	71	81
A - Length	mm	1210	1210	1210	1404	1404	1404	1404
B - Width	mm	402	402	402	405	405	405	405
C - Height	mm	945	945	945	1414	1414	1414	1414
A1	mm	400	400	400	400	400	400	400
A2	mm	400	400	400	400	400	400	400
B2	mm	600	600	600	1100	1100	1100	1100
230/1/50	Operating weight	kg	99	99	162	162	162	162
400/3/50+N	Operating weight	kg	-	-	-	177	177	177

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

230/1/50 Supply voltage 230/1/50
400/3/50+N Supply voltage 400/3/50+N

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

VOLTAGE:

- ▶ **230M** Supply voltage 230/1/50 (Standard)
- ▶ **400TN** Supply voltage 400/3/50+N (sizes 61÷81 only)

technical data

Size – WSAN-XMi			21	31	41	51	61	71	81
230/1/50 ▶ Cooling capacity (EN14511:2013) (1)	kW		4,65	6,69	8,06	9,90	12,2	13,0	13,8
230/1/50 Total power input (EN14511:2013) (1)	kW		1,56	2,48	3,50	3,09	4,14	4,50	5,13
230/1/50 EER (EN 14511:2013) (1)	-		2,98	2,70	2,30	3,20	2,95	2,89	2,68
230/1/50 SEER (4)	-		4,61	4,75	4,52	5,24	5,34	4,86	4,34
230/1/50 ▶ Heating capacity (EN14511:2013) (2)	kW		4,72	6,72	9,19	10,20	12,6	14,1	16,1
230/1/50 Total power input (EN14511:2013) (2)	kW		1,01	1,46	2,63	2,08	2,60	3,18	3,64
230/1/50 COP (EN 14511:2013) (2)	-		3,29	3,35	3,49	3,35	3,26	3,16	3,09
230/1/50 Water flow-rate (User Side)	l/s		0,22	0,32	0,39	0,49	0,58	0,59	0,63
230/1/50 Useful pump discharge head	kPa		61,5	48,0	36,9	54,5	41,6	40,1	34,8
230/1/50 Sound pressure level (3)	dB(A)		49	51	53	52	55	58	58
400/3/50+N ▶ Cooling capacity (EN14511:2013) (1)	kW		-	-	-	-	12,3	13,8	15,3
400/3/50+N Total power input (EN14511:2013) (1)	kW		-	-	-	-	4,22	5,12	6,42
400/3/50+N EER (EN 14511:2013) (1)	-		-	-	-	-	2,91	2,70	2,38
400/3/50+N SEER (4)	-		-	-	-	-	5,02	4,88	4,92
400/3/50+N ▶ Heating capacity (EN14511:2013) (2)	kW		-	-	-	-	12,0	14,1	16,1
400/3/50+N Total power input (EN14511:2013) (2)	kW		-	-	-	-	2,72	3,24	3,75
400/3/50+N COP (EN 14511:2013) (2)	-		-	-	-	-	3,25	3,18	3,07
400/3/50+N Water flow-rate (User Side)	l/s		-	-	-	-	0,58	0,60	0,63
400/3/50+N Useful pump discharge head	kPa		-	-	-	-	41,9	38,2	34,8
400/3/50+N Sound pressure level (3)	dB(A)		-	-	-	-	55	58	58
Refrigeration circuits	Nr		1						
No. of compressors	Nr		1						
Type of compressors	-		ROTARY INVERTER DC						
Standard airflow	l/s		847	847	847	1708	1708	1708	1708
Directive ErP (Energy Related Products)									
ErP Energy Class - AVERAGE Climate - W35			A++	A++	A++	A++	A++	A++	A++
ErP Energy Class - AVERAGE Climate - W55			A++	A++	A++	A++	A++	A++	A++
230/1/50 SCOP - AVERAGE Climate - W35 (4)	-		4,48	4,53	4,16	4,13	4,23	4,40	4,25
230/1/50 SCOP - AVERAGE Climate - W55 (4)	-		3,30	3,30	3,25	3,25	3,25	3,25	3,20
400/3/50+N SCOP - AVERAGE Climate - W35 (4)	-		-	-	-	-	4,45	4,28	4,18
400/3/50+N SCOP - AVERAGE Climate - W55 (4)	-		-	-	-	-	3,25	3,28	3,23

Notes

- (1) Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: Internal exchanger water temperature = 12/7°C; Entering eExternal exchanger air temperature = 35°C
- (2) Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: Internal exchanger water temperature = 40/45°C. External exchanger air temperature 7 D.B./6 (°C) W.B.
- (3) The sound levels refer to the unit at full load, in the rated test conditions. The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature 35°C
- (4) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rate heat output ≤70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

230/1/50 Supply voltage 230/1/50
400/3/50+N Supply voltage 400/3/50+N

accessories

- ▶ **IBHX** Backup electric heater (sizes 21÷41)
- ▶ **KTFLX** Hose kit for connection to the chiller/heat pump
- ▶ **KSAX** 100-litre circuit breaker
- ▶ **QERAX** Connection electrical panel of the DHW storage heater
- ▶ **ACS500X** 500-litre domestic hot water storage tank
- ▶ **ACS300X** 300-litre domestic hot water storage tank (sizes 21÷51)
- ▶ **ACS55X** 500-litre domestic hot water storage tank with solar coil
- ▶ **ACS35X** 300-litre domestic hot water storage tank with solar coil (sizes 21÷51)
- ▶ **3DHWX** Three-way valve for domestic hot water

Key to symbols:

- Accessories separately supplied

Reversible heat pump
Air cooled
Outdoor installation
Capacity from 19,7 to 55 kW

ELFOEnergy Sheen

DC Inverter



► **SEASONAL EFFICIENCY:** Guaranteed by DC Inverter technology applied to the compressor and fans, which can modulate its speed to the energy needs required. This solution allows a further reduction in consumption and a significant improvement of the seasonal efficiency.

► **ADVANCED TECHNOLOGY:** Clivet's continuous improving has allowed to realize ELFOEnergy Sheen with special design features: Hydrophilic battery for a guarantee of efficiency in all conditions, electronic expansion valve to optimize the operation of the cooling circuit with DC inverter compressor and fans.

► **EXTENDED OPERATING RANGE:** ELFOEnergy Sheen is able to meet the strictest requirements in terms of operating temperatures, with great efficiency. In cooling, its operation is guaranteed even with very low outside temperatures (from 52°C to -15°C), ideal for the requirements of IT applications. In heating, its operation is guaranteed down to external air temperatures of -15°C producing hot water of up to 55°C.



Unit listed on
www.eurovent-certification.com



ErP compliant

functions and features



Heat pump



Air cooled



Outdoor installation



R-410A



Hermetic Scroll

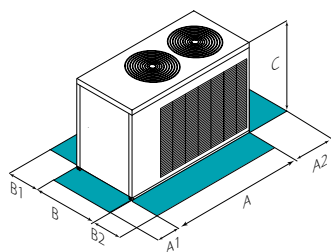


Full Inverter DC



Electronic expansion valve

dimensions and clearances



Size – WSAN-XSi		10.1	12.1	14.1	16.2	18.2	22.2
A - Length	mm	1876	1876	1876	2218	2218	2218
B - Width	mm	1005	1005	1005	1057	1057	1057
C - Height	mm	1176	1176	1176	1339	1339	1339
A1	mm	800	800	800	800	800	800
A2	mm	800	800	800	800	800	800
B1	mm	800	800	800	800	800	800
B2	mm	800	800	800	800	800	800
Operating weight	kg	300	300	300	480	480	480

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

VOLTAGE:

- ▶ **230M** Supply voltage 230/1/50 (Standard)
- ▶ **400TN** Supply voltage 400/3/50+N (sizes 61÷81 only)

technical data

Size - W SA N-XS i			10.1	12.1	14.1	16.2	18.2	22.2
▶ Cooling capacity (EN14511:2013)	(1)	kW	19,7	23,5	27,0	41,5	47,5	55,0
Total power input (EN14511:2013)	(1)	kW	7,04	8,35	10,8	14,4	17,6	22,0
EER (EN 14511:2013)	(1)	-	2,80	2,81	2,50	2,89	2,70	2,50
SEER	(4)	-	4,08	4,10	4,11	3,90	3,92	3,93
▶ Heating capacity (EN14511:2013)	(2)	kW	23,3	27,1	31,0	45,5	52,3	61,0
Total power input (EN14511:2013)	(2)	kW	7,39	8,81	10,3	14,4	17,0	20,3
COP (EN 14511:2013)	(2)	-	3,15	3,08	3,00	3,17	3,07	3,00
Refrigeration circuits	Nr		1					
No. of compressors	Nr		1			2		
Type of compressors			ROTARY INVERTER					
Standard airflow	l/s		3472	3472	3472	6667	6667	6667
Standard power supply	V		400/3/50+N					
Sound pressure level	(3)	dB(A)	59	60	61	64	66	67
Directive ErP (Energy Related Products)								
ErP Energy Class - AVERAGE Climate - W35	-		A++	A++	A++	A++	A++	A++
SCOP - AVERAGE Climate - W35	(4)	-	3,97	3,99	4,01	3,82	3,83	3,85

Notes

- (1) Data compliant to Standard EN 14511:2013 referred to the following conditions: - Internal exchanger water temperature = 12/7°C - Entering external exchanger air temperature = 35°C
- (2) Data compliant to Standard EN 14511:2013 referred to the following conditions: - Internal exchanger water temperature = 40/45°C - Entering external exchanger air temperature = 7°C D.B./6°C W.B
- (3) The sound levels refer to the unit at full load, in the rated test conditions. The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature 35°C

- (4) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rate heat output ≤70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

accessories

- ▶ **HYG1** Hydronic assembly with 1 ON/OFF pump
- **IFWX** Steel mesh strainer on the water side
- **AVIBX** Anti-vibration mount support

Key to symbols:

- Accessories separately supplied

Water chiller

WSAT-XEE: cooling only
WSAN-XEE: reversible heat pump
Air cooled
Outdoor installation
Capacity from 24 to 73,1 kW

ELFOEnergy Medium



Liquid chillers and heat pumps of the **ELFOEnergy Medium** range, ideal for the small-scale commercial sector, are specifically designed for outdoor installation.

- **High energy efficiency**, especially during operation at partial loads, thanks to the use of two compressors of different capacity operating on a single cooling circuit
- **Ideal for systems with radiant panels or hydronic terminal units**
- **Hydronic assembly supplied as standard**, available with pumps with non-standard available head and/or with double pump
- **Storage tank not normally necessary**, but available for applications where the quantity of water in the system is below limits.



Unit listed on
www.eurovent-certification.com

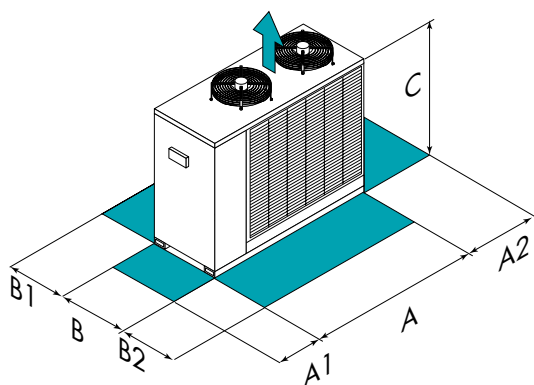


ErP compliant

functions and features



dimensions and clearances



CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size – WSAT-XEE		82	102	122	162	182	222	262	302
A - Length	mm	1771	1771	1771	2012	2012	2012	2406	2406
B - Width	mm	680	680	680	1100	1100	1100	1100	1100
C - Height	mm	1287	1287	1287	1599	1599	1599	1593	1593
A1	mm	700	700	700	700	700	700	700	700
A2	mm	700	700	700	700	700	700	700	700
B1	mm	700	700	700	700	700	700	700	700
B2	mm	700	700	700	700	700	700	700	700
Operating weight	kg	298	303	323	456	469	490	547	561
Size – WSAN-XEE		82	102	122	162	182	222	262	302
A - Length	mm	1771	1771	1771	2012	2012	2012	2406	2406
B - Width	mm	680	680	680	1100	1100	1100	1100	1100
C - Height	mm	1287	1287	1287	1599	1599	1599	1593	1593
A1	mm	700	700	700	700	700	700	700	700
A2	mm	700	700	700	700	700	700	700	700
B1	mm	700	700	700	700	700	700	700	700
B2	mm	700	700	700	700	700	700	700	700
Operating weight	kg	315	320	370	530	550	580	675	690

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

LOW TEMPERATURE:

- ▶ - Low temperature: not required (Standard)
- ▶ **B** Water low temperature

DOUBLE SET POINT:

- ▶ - Double set point: not required (Standard)
- ▶ **DSPB** Double set point for water low temperature

ENERGY RECOVERY:

- ▶ - Energy recovery: not required (Standard)
- ▶ **D** Partial energy recovery

FREE-COOLING (WSAT-XEE ONLY):

- ▶ - FREE-COOLING: not required (Standard)
- ▶ **FCD** Direct FREE-COOLING

EXTERNAL SECTION FAN CONSUMPTION REDUCTION (WSAT-XEE ONLY):

- ▶ - Device for fan consumption reduction of the external section: not required (Standard)
- ▶ **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type

OPERATION (WSAN-XEE ONLY):

- ▶ **OHP** Operation in heat pump (Standard)
- ▶ **OHO** Heating-only operation

technical data

Size – WSAT-XEE			82	102	122	162	182	222	262	302
▶ Cooling capacity (EN 14511:2013)	(1)	kW	24,7	28,7	34,2	40,5	46,4	55,2	65,0	73,1
Total power input (EN 14511:2013)	(1)	kW	9,26	10,7	12,8	14,6	17,1	20,8	24,1	27,2
EER (EN 14511:2013)	(1)	-	2,67	2,67	2,68	2,78	2,72	2,65	2,70	2,69
SEER	(4)	-	3,85	3,84	3,82	3,84	3,84	3,82	3,83	3,83
Refrigeration circuits		Nr	1							
No. of compressors		Nr	2							
Type of compressors			SCROLL							
Standard airflow		l/s	2545	2538	2514	4933	4875	4778	7196	7145
Water flow-rate (User Side)		l/s	1,20	1,30	1,60	1,90	2,20	2,60	3,10	3,40
Useful pump discharge head		kPa	132	126	120	104	88	148	139	131
Standard power supply		V	400/3/50+N							
Sound pressure level (1 m)	(3)	dB(A)	60	60	60	64	64	65	65	65
Size – WSAN-XEE			82	102	122	162	182	222	262	302
▶ Cooling capacity (EN 14511:2013)	(1)	kW	24,0	28,0	33,2	39,9	46,1	53,7	63,9	72,8
Total power input (EN 14511:2013)	(1)	kW	9,77	11,2	13,4	15,7	18,2	21,7	25,7	29,0
EER (EN 14511:2013)	(1)	-	2,46	2,49	2,48	2,55	2,54	2,47	2,49	2,51
SEER	(4)	-	3,47	3,66	3,56	3,28	3,46	3,55	3,65	3,65
▶ Heating capacity (EN 14511:2013)	(2)	kW	28,4	32,5	37,0	45,1	52,6	61,1	71,5	82,8
Total power input (EN 14511:2013)	(2)	kW	9,42	10,7	12,1	14,5	17,0	19,7	22,8	26,2
COP (EN 14511:2013)	(2)	-	3,01	3,04	3,06	3,11	3,10	3,10	3,13	3,16
Refrigeration circuits		Nr	1							
No. of compressors		Nr	2							
Type of compressors			SCROLL							
Standard airflow		l/s	2553	2545	2514	4965	4902	4778	7196	6971
Water flow-rate (User Side)	(1)	l/s	1,10	1,30	1,60	1,90	2,20	2,50	3,00	3,40
Useful pump discharge head	(1)	kPa	136	129	125	107	89	150	141	131
Standard power supply		V	400/3/50+N							
Sound pressure level		dB(A)	60	60	60	64	64	65	65	65
Directive ErP (Energy Related Products)										
ErP Energy Class - AVERAGE Climate - W35		-	A+	A+	A+	A+	A+	A+	A+	A+
SCOP - AVERAGE Climate - W35	(4)	-	3,33	3,48	3,60	3,22	3,27	3,20	3,28	3,35

Notes

- (1) Data compliant to Standard EN 14511:2013 referred to the following conditions: - Internal exchanger water temperature = 12/7°C - Entering external exchanger air temperature = 35°C
- (2) Data calculated in compliance with Standard UNI-EN14511:2013 referred to the following conditions: Internal exchanger water temperature = 40/45°C, entering external exchanger air temperature = 7°C D.B. / 6°C W.B.
- (3) The sound levels refer to the unit at full load, in the rated test conditions.
The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature 35°C
- (4) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

- ▶ **CCCA** Copper / aluminium condenser coil with acrylic lining
- ▶ **CCCA1** Condenser coil with Aluminium Energy Guard DCC treatment
- ▶ **1PUR** Single-pump with reduced available head
- ▶ **1PUM** Single-pump with larger available head
- ▶ **2PUS** Standard double pump
- ▶ **2PUR** Double pump with reduced available head (sizes 222÷302)
- ▶ **2PUM** Double pump with larger available head
- ▶ **ACC1** Teflon steel storage device
- **IFWX** Steel mesh strainer on the water side
- **MHP** High and low pressure gauges
- **MHPX** High and low pressure gauges
- **AMRX** Rubber antivibration mounts
- **PGCEX** Coil protection grilles outdoor air side

Key to symbols:

- Accessories separately supplied

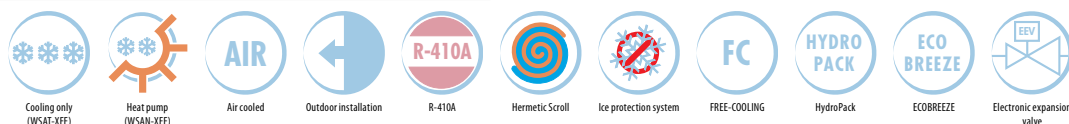
- ▶ **SFSTR4N** Disposal for inrush current reduction, for unit 400/3/50+N
- ▶ **PM** Phase monitor
- **PMX** Phase monitor
- **RCMRX** Remote control via microprocessor control
- **CMMBX** Serial communication module to supervisor (Modbus)
- ▶ **CMSC7** Modbus/LON WORKS serial converter kit
- ▶ **CMSC9** Serial communication module for Modbus supervisor
- **PCDWX** Daily and weekly programming clock
- **SCP3X** Set point compensation according to the outside enthalpy
- ▶ **CLSE** Free contacts for alarm
- ▶ **PFCP** Power factor correction capacitors (cosφ > 0.9)
- WSAT-XEE only:**
- **SPCX** Set-point compensation with outdoor air temperature probe

Water chiller

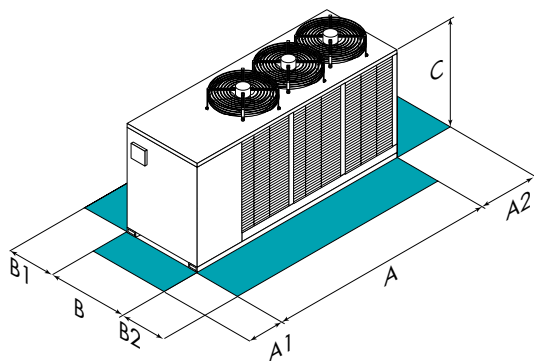
WSAT-XEE: cooling only
WSAN-XEE: reversible heat pump
Air cooled
Outdoor installation
Capacity from 95,6 to 216 kW



functions and features



dimensions and clearances



CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

ELFOEnergy Large²

ELFOEnergy Large² water chillers and heat pumps provide the highest seasonal efficiency. They're designed to be installed outdoor and feature uneven scroll compressors mounted in the same circuit, electronic expansion valves and high efficiency plate type evaporators.

ELFOEnergy Large² shows an unmatched seasonal efficiency SEER and is available in two versions: EXCELLENCE and PREMIUM. The standard version EXCELLENCE offers the highest efficiency both at full and at part load. Also the PREMIUM version offers high efficiency at part load but favours also the compact dimensions being therefore extremely competitive.

Thanks to its features, ELFOEnergy Large² offers:

- **self-adaptability in different load conditions**, thanks to the availability of several capacity steps and the adjustment logic developed for maximum efficiency and minimum wear
- **very high overall reliability**, thanks to the consolidated construction choices and the use of industrially-made products
- **lower sound emissions**, achieved thanks to the optimal sizing of the exchange surfaces and the use of high efficiency fans with "winglets"
- **quick and easy installation** thanks to the quick connections with the main circuit, electrical wiring enablement and complete functional testing before delivery. The units can also be supplied with pump assemblies, partial heat recovery and inertial storage tank already installed on board, bringing together all the system's main components in a single solution.

Size – WSAT-XEE		352	402	432	452	502	552	602	702	802
SC-EXC	A - Length	mm	3075	3075	3075	4025	4025	4025	4025	5025
SC-EXC	B - Width	mm	1097	1097	1097	1097	1097	1097	1097	1097
SC-EXC	C - Height	mm	1805	1805	1805	1805	1805	1805	1805	1805
SC-EXC	A1	mm	1000	1000	1000	1000	1000	1000	1000	1000
SC-EXC	A2	mm	700	700	700	700	700	700	700	700
SC-EXC	B1	mm	1350	1350	1350	1350	1350	1350	1350	1350
SC-EXC	B2	mm	1350	1350	1350	1350	1350	1350	1350	1350
SC-EXC	Operating weight	kg	896	933	1024	1207	1234	1256	1302	1497

Size – WSAT-XEE		352	402	432	452	502	552	602	702	802
SC-PRM	A - Length	mm	2710	2710	2710	2710	2710	3075	4025	4025
SC-PRM	B - Width	mm	1097	1097	1097	1097	1097	1097	1097	1097
SC-PRM	C - Height	mm	1805	1805	1805	1805	1805	1805	1805	1805
SC-PRM	A1	mm	1000	1000	1000	1000	1000	1000	1000	1000
SC-PRM	A2	mm	700	700	700	700	700	700	700	700
SC-PRM	B1	mm	1350	1350	1350	1350	1350	1350	1350	1350
SC-PRM	B2	mm	1350	1350	1350	1350	1350	1350	1350	1350
SC-PRM	Operating weight	kg	778	802	892	924	963	984	1087	1295

Size – WSAN-XEE		352	402	432	452	502	552	602	702	802
SC	A - Length	mm	3075	3075	3075	3075	4025	4025	5025	5025
SC	B - Width	mm	1097	1097	1097	1097	1097	1097	1097	1097
SC	C - Height	mm	1805	1805	1805	1805	1805	1805	1805	1805
SC	A1	mm	1000	1000	1000	1000	1000	1000	1000	1000
SC	A2	mm	700	700	700	700	700	700	700	700
SC	B1	mm	1350	1350	1350	1350	1350	1350	1350	1350
SC	B2	mm	1350	1350	1350	1350	1350	1350	1350	1350
SC	Operating weight	kg	915	975	1059	1101	1126	1326	1341	1549

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

SC-EXC Compressors soundproofing (SC)-Excellence

SC-PRM Compressors soundproofing (SC)-Premium

SC Compressors soundproofing (SC)

accessories

- ▶ **1PUS** Standard pump
- ▶ **1PU1SB** Standard pump with emergency pump
- ▶ **2PM** Hydropack load side with 2 pumps
- ▶ **IFWX** Steel mesh strainer on the water side
- ▶ **A300** 300-litre storage tank (sizes 352÷602)
- ▶ **A300RPS** 300-litre storage tank with primary circuit onboard (sizes 352÷602)
- ▶ **A500** 500 l. storage tank (sizes 702÷802)
- ▶ **A500RPS** 500-litre storage tank with primary circuit onboard (sizes 702÷802)
- ▶ **ABU** Flush hydraulic connections
- ▶ **CCCA** Copper / aluminium condenser coil with acrylic lining
- ▶ **CCCA1** Condenser coil with Aluminium Energy Guard DCC treatment
- ▶ **AMMX** Spring antivibration mounts
- ▶ **PGCCH** Anti-hail protection grilles
- ▶ **PGFC** Finned coil protection grill
- ▶ **PSX** Mains power supply
- ▶ **CONTA2** Energy meter
- ▶ **RCMRX** Remote control via microprocessor control
- ▶ **CMSC8** Serial communication module for BACnet supervisor
- ▶ **CMSC10** Serial communication module for LonWorks supervisor
- ▶ **CMSC9** Serial communication module for Modbus supervisor
- ▶ **SCP4** Set-point compensation with 0-10 V signal

- ▶ **SPC2** Set-point compensation with outdoor air temperature probe
- ▶ **ECS** ECOSHARE function for the automatic management of a group of units
- ▶ **PFCP** Power factor correction capacitors (cosφ > 0.9)
- ▶ **SFSTR** Disposal for inrush current reduction
- ▶ **MHP** High and low pressure gauges
- ▶ **PM** Phase monitor
- ▶ **MF2** Multi-function phase monitor

WSAT-XEE only:

- ▶ **RE-20** Electrical panel antifreeze protection for min. outdoor temperature down to -20°C
- ▶ **RE-25** Electrical panel antifreeze protection for min. outdoor temperature down to -25°C
- ▶ **RE-30** Electrical panel antifreeze protection for min. outdoor temperature down to -30°C
- ▶ **RE-35** Electrical panel antifreeze protection for min. outdoor temperature down to -35°C
- ▶ **RE-39** Electrical panel antifreeze protection for min. outdoor temperature down to -39°C
- ▶ **FANQE** Electrical panel ventilation
- ▶ **SDV** Cutoff valve on compressor supply and return

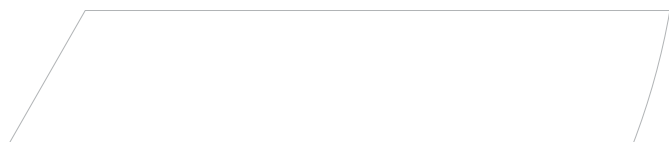
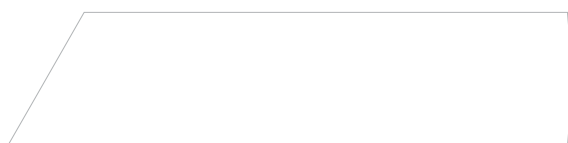
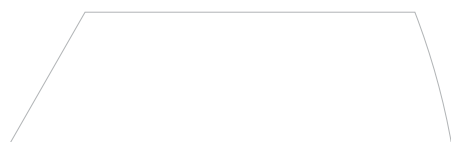
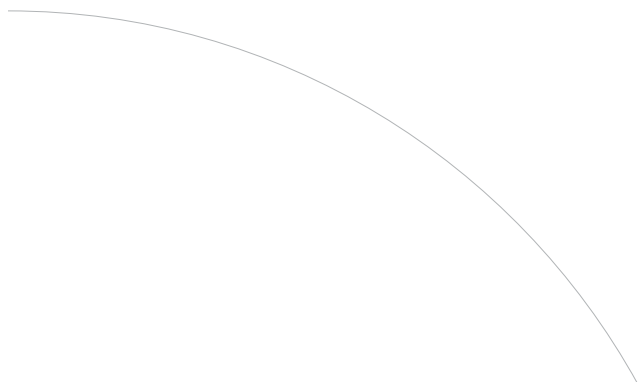
WSAN-XEE only:

- ▶ **OHE** Limit extension kit in heating up to -10°C (W.B.)

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.



Reversible heat pump

Air cooled

Outdoor installation

Capacity from 21,3 to 80,3 kW**ELFOEnergy Vulcan Medium**

ELFOEnergy Vulcan Medium comprises a series of **high temperature** heat pumps, ideal as a one-stop heating, cooling and hot water solution for centralised systems.

- Ideal for centralised systems such as residential complexes, hotels and collective applications
- Operation with outdoor air temperature down to -18°C
- Hot water production up to 60°C at outdoor temperatures of down to -10°C
- Dual temperature management and domestic hot water production



Unit listed on
www.eurovent-certification.com



ErP compliant

functions and features

Heat pump



Air cooled



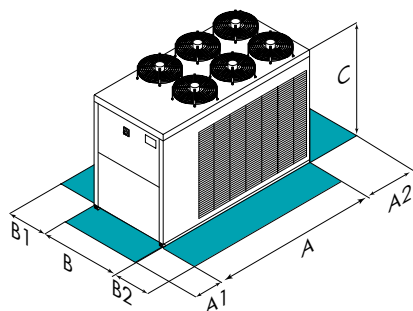
Outdoor installation



R-407C



Hermetic Scroll

ELFOControl²**dimensions and clearances**

Size – WBAN		82	122	162	202	262	302
A - Length	mm	1928	1928	2328	2328	2932	2932
B - Width	mm	1100	1100	1100	1100	1100	1100
C - Height	mm	1474	1474	1500	1500	1500	1500
A1	mm	700	700	700	700	700	700
A2	mm	700	700	700	700	700	700
B1	mm	700	700	700	700	700	700
B2	mm	700	700	700	700	700	700
Operating weight	kg	420	466	635	670	803	826

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAUTION!For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

LOW TEMPERATURE:

- - Low temperature: not required (Standard)
- **B** Water low temperature

OPERATION:

- - Operating limit extension: not required (Standard)
- **EOL** Operating limit extension

ENERGY RECOVERY:

- - Energy recovery: not required (Standard)
- **D** Partial energy recovery

technical data

Size – WBAN		82	122	162	202	262	302
Unit for radiant panels							
A7/W35							
► Heating capacity	kW	31,0	41,4	53,3	73,9	83,3	103
Total power input	kW	7,04	9,93	13,0	17,5	20,6	25,3
COP (EN 14511:2013)	-	4,40	4,17	4,12	4,23	4,05	4,05
A35/W18							
► Cooling capacity	kW	30,4	44,3	55,4	75,0	94,5	113
Total power input	kW	8,26	14,0	16,3	24,4	30,7	36,9
EER (EN 14511:2013)	-	3,69	3,18	3,39	3,08	3,07	3,05
Terminal units							
A7/W45							
► Heating capacity	kW	29,1	40,3	51,0	71,1	80,4	99,5
Total power input	kW	8,53	12,1	15,5	20,8	24,8	30,8
COP (EN 14511:2013)	-	3,41	3,34	3,28	3,41	3,24	3,23
A35/W7							
► Cooling capacity	kW	21,3	32,2	39,7	53,9	65,9	80,3
Total power input	kW	7,79	12,5	14,9	21,9	27,6	32,1
EER (EN 14511:2013)	-	2,73	2,58	2,67	2,46	2,39	2,50
SEER	(2)	2,68	2,70	2,79	2,69	2,60	2,74
Radiators							
A7/W55							
► Heating capacity	kW	27,4	40,1	48,6	69,3	78,4	98,2
Total power input	kW	10,3	14,9	18,4	25,3	29,9	37,6
COP (EN 14511:2013)	-	2,65	2,69	2,64	2,74	2,62	2,61
Refrigeration circuits	Nr	2					
No. of compressors	Nr	2					
Type of compressors	-	SCROLL					
Water flow-rate (User Side)	(1) l/s	1,00	1,50	1,90	2,60	3,10	3,80
Useful pump discharge head	(1) kPa	183	183	173	195	184	201
Standard power supply	V	400/3/50+N					
Sound pressure level (1 m)	dB(A)	62	63	65	65	66	67
Directive ErP (Energy Related Products)							
ErP Energy Class - AVERAGE Climate - W35	-	A+	A+	A+	A+	A+	A+
ErP Energy Class - AVERAGE Climate - W55	-	-	A+	-	A+	-	-
SCOP - AVERAGE Climate - W35	(2)	3,24	3,63	3,42	3,70	3,45	3,19
SCOP - AVERAGE Climate - W55	(2)	-	2,95	-	2,99	-	-

Notes

(1) Data refer to the following conditions: internal water exchanger = 12/7 °C; outdoor air temperature 35°C

(2) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rate heat output ≤70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

Performances according to EN 14511:2013

A7/W35 internal exchanger water 30/35°C; external air temperature 7°C D.B./ 6°C W.B.

A7/W45 internal exchanger water 40/45°C; external air temperature 7°C D.B./ 6°C W.B.

A7/W55 internal exchanger water 45/55°C; external air temperature 7°C D.B./ 6°C W.B.

A35/W18 internal exchanger water 23/18°C; external air temperature 35°C

A35/W7 internal exchanger water 12/7°C; external air temperature 35°C

accessories

- **1PUR** Single-pump with reduced available head
- **1PUM** Single-pump with larger available head
- **1PUHE** High efficiency single inverter pump for primary circuit.
- **ECHP** External fans with larger available head "ECOBREEZE"
- **AMRX** Rubber antivibration mounts
- **CCCA** Copper / aluminium condenser coil with acrylic lining
- **SFSTR4N** Disposal for inrush current reduction, for unit 400/3/50+N
- **PFCP** Power factor correction capacitors (cosφ > 0.9)
- **3DHW** Built-in 3-way valve for domestic hot water on the unit

- **3DHWX** Three-way valve for domestic hot water
- **IS4** Compressor insulation
- **PGFC** Finned coil protection grill
- **PGFCX** Finned coil protection grill
- **PM** Phase monitor
- **PMX** Phase monitor
- **TCDC** Condensate collection pan with electric heater
- **CACSX** Domestic hot water kit control
- **TASRX** Compartment for multifunction keyboard

Key to symbols:

- Accessories separately supplied

Water chiller

WSAT-XIN: cooling only
WSAN-XIN: reversible heat pump
Air cooled
Outdoor installation
Capacity from 50 to 124 kW

ELFOEnergy Magnum

The **ELFOEnergy Magnum** heat pumps and liquid chillers are high efficiency packaged units for small and medium-sized applications in the services sector. Designed for outdoor installation, they ensure the highest energy efficiency over the entire operating cycle, especially under load staging conditions that coincide with the unit's longer operating time, **thanks to the continuous capacity modulation** that adapts the capacity supplied to the actual energy demand required by the system. ELFOEnergy Magnum is available in the EXCELLENCE version that offers the highest energy efficiency both during the seasonal cycle and under full load conditions. Benefits of ELFOEnergy Magnum:

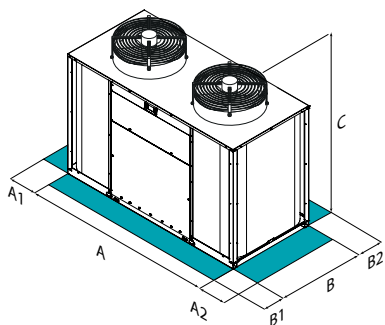
- **HIGH UNIT RELIABILITY**, thanks to the double refrigerant circuit, to the proven architecture and to the components produced at high volumes.
- **ADVANCED TECHNOLOGY**: The modulating pumping unit developed by Clivet, consisting of two parallel pumps controlled by an inverter, allows for lower consumption and at the same time ensures operation even under critical conditions. It automatically reduces the water flow rate according to the load required by the system, by controlling the temperature, and prevents blocks due to overloads in the event of critical conditions.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE**: The compact construction allows to combine multiple units in confined spaces, realizing a high power system. The control allows to coordinate up to 7 units managing automatically the operation with maximum efficiency.



functions and features



dimensions and clearances



Size – WSAT-XIN		18.2	20.2	25.2	30.2	35.2	40.2	45.2
A - Length	mm	2400	2400	2400	2400	3600	3600	3600
B - Width	mm	1100	1100	1100	1100	1100	1100	1100
C - Height	mm	1540	1540	1790	1790	1890	1890	1890
A1	mm	800	800	800	800	800	800	800
A2	mm	800	800	800	800	800	800	800
B1	mm	800	800	800	800	800	800	800
B2	mm	800	800	800	800	800	800	800
Operating weight	kg	585	595	634	676	813	860	923
Size – WSA-N-XIN		18.2	20.2	25.2	30.2	35.2	40.2	45.2
A - Length	mm	2400	2400	2400	2400	3600	3600	3600
B - Width	mm	1100	1100	1100	1100	1100	1100	1100
C - Height	mm	1540	1540	1790	1790	1890	1890	1890
A1	mm	800	800	800	800	800	800	800
A2	mm	800	800	800	800	800	800	800
B1	mm	800	800	800	800	800	800	800
B2	mm	800	800	800	800	800	800	800
Operating weight	kg	605	620	670	695	858	897	937

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

ENERGY RECOVERY:

- ▶ - Energy recovery: not required (Standard)
- ▶ D Partial energy recovery

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

- ▶ CREFB Device for fan consumption reduction of the external section, ECOBREEZE type (Standard)

technical data

Size – WSAT-XIN			18.2	20.2	25.2	30.2	35.2	40.2	45.2
▶ Cooling capacity (EN14511:2013)	(1)	kW	50,1	62,7	74,3	86,3	99,1	112,0	124,0
Total power input (EN14511:2013)	(1)	kW	16,1	20,2	23,9	27,6	31,8	36,1	40,1
EER (EN 14511:2013)	(1)	-	3,12	3,10	3,11	3,13	3,12	3,11	3,10
SEER	(4)	-	3,80	3,86	3,80	4,09	4,02	4,07	4,36
Refrigeration circuits	Nr		2						
No. of compressors	Nr		2						
Type of compressors	-		ON/OFF + INVERTER						
Supply airflow	l/s		10556	10556	13056	13056	13333	14167	14167
Water flow-rate (User Side)	l/s		2,40	3,00	3,50	4,10	4,70	5,40	5,90
Standard power supply	V		400/3/50+N						
Sound pressure level	(3)	dB(A)	65	65	66	66	68	68	69
Size – WSAN-XIN			18.2	20.2	25.2	30.2	35.2	40.2	45.2
▶ Cooling capacity (EN14511:2013)	(1)	kW	49,6	59,3	69,5	82,2	92,5	106,0	120,0
Total power input (EN14511:2013)	(1)	kW	16,9	20,6	23,6	28,8	33,6	38,8	46,0
EER (EN 14511:2013)	(1)	-	2,93	2,88	2,94	2,85	2,75	2,72	2,60
SEER	(4)	-	3,34	3,43	3,47	3,63	3,76	3,73	3,82
▶ Heating capacity (EN14511:2013)	(2)	kW	56,0	68,4	78,1	93,0	106	123	140
Total power input (EN14511:2013)	(2)	kW	17,5	21,3	24,4	29,0	33,1	38,2	43,6
COP (EN 14511:2013)	(2)	-	3,20	3,21	3,20	3,21	3,21	3,21	3,20
Refrigeration circuits	Nr		2						
No. of compressors	Nr		2						
Type of compressors	-		INVERTER + ON/OFF SCROLL						
Supply airflow	l/s		10556	10556	13056	13056	13333	14167	14167
Water flow-rate (User Side)	l/s		2,37	2,83	3,32	3,92	4,42	5,04	5,71
Standard power supply	V		400/3/50+N						
Sound pressure level	(3)	dB(A)	65	65	66	66	68	68	69
Directive ErP (Energy Related Products)									
ErP Energy Class - AVERAGE Climate - W35	-		A+	A+	A+	A+	-	-	-
SCOP - AVERAGE Climate - W35	(4)	-	3,55	3,59	3,45	3,61	3,68	3,65	3,81

Notes

- (1) Data compliant to Standard EN 14511:2013 referred to the following conditions: - Internal exchanger water temperature = 12/7°C - Entering external exchanger air temperature = 35°C
- (2) Data calculated in compliance with Standard UNI-EN14511:2013 referred to the following conditions: Internal exchanger water temperature = 40/45°C, entering external exchanger air temperature = 7°C D.B. / 6°C W.B.
- (3) The sound levels refer to the unit at full load, in the rated test conditions.
The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature 35°C
- (4) Data calculated according to the EN 14825:2016 Regulation
The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

- ▶ **CCCA** Copper / aluminium condenser coil with acrylic lining
- ▶ **CCCA1** Condenser coil with Aluminium Energy Guard DCC treatment
- ▶ **HYG1** Hydronic assembly with 1 ON/OFF pump
- ▶ **HYG2** Hydronic assembly with 2 ON/OFF pumps
- ▶ **VARYP** VARYFLOW + (2 inverter pumps)
- ▶ **HYGU1V** User side hydronic assembly with 1 inverter pump
- ▶ **ACC** Storage tank (sizes 35.2÷45.2)
- ▶ **CMSC10** Serial communication module for LonWorks supervisor
- ▶ **CMSC8** Serial communication module for BACnet supervisor
- ▶ **CMSC9** Serial communication module for Modbus supervisor
- ▶ **CMMBX** Serial communication module to supervisor (Modbus)
- ▶ **CMSLWX** LonWorks serial communication module
- ▶ **BACX** BACnet serial communication module
- ▶ **HEDIF** Diffuser for high efficiency axial fan
- ▶ **MF2** Multi-function phase monitor
- ▶ **SFSTR4N** Disposal for inrush current reduction, for unit 400/3/50+N
- ▶ **RCTX** Remote control
- ▶ **PGFC** Finned coil protection grill
- ▶ **PGFCX** Finned coil protection grill
- ▶ **AVIBX** Anti-vibration mount support
- ▶ **IFWX** Steel mesh strainer on the water side
- ▶ **PFCP** Power factor correction capacitors (cosφ > 0.9)
- WSAN-XIN only:**
- ▶ **VACS** DHW switching valve: required

Key to symbols:

- Accessories separately supplied

Water chiller

WSAT-XEM: cooling only
WSAN-XEM: reversible heat pump
Air cooled
Outdoor installation
Capacity from 139 to 354 kW

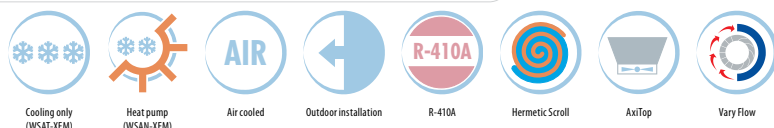


Unit listed on
www.eurovent-certification.com

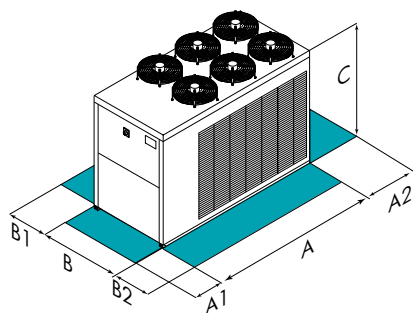


ErP compliant

functions and features



dimensions and clearances



CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

ELFOEnergy Magnum

The **ELFOEnergy Magnum** heat pumps and liquid chillers are high efficiency packaged units for small and medium-sized applications in the services sector. Designed for outdoor installation, they ensure the highest energy efficiency over the entire operating cycle, especially under load staging conditions that coincide with the unit's longer operating time, **thanks to the modular scroll technology** that adapts the capacity supplied to the actual energy demand required by the system.

ELFOEnergy Magnum is available in the two EXCELLENCE and PREMIUM versions. The EXCELLENCE version offers the highest energy efficiency both during the seasonal cycle and under full load conditions. The PREMIUM version provides excellent performance under partial load conditions, but has a compact design which gives it an additional competitive edge.

Benefits of ELFOEnergy Magnum:

- **HIGH UNIT RELIABILITY**, thanks to the double refrigerant circuit, to the proven architecture and to the components produced at high volumes.
- **ADVANCED TECHNOLOGY**: The modulating pumping unit developed by Clivet, consisting of two parallel pumps controlled by an inverter, allows for lower consumption and at the same time ensures operation even under critical conditions. It automatically reduces the water flow rate according to the load required by the system, by controlling the temperature, and prevents blocks due to overloads in the event of critical conditions.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE**: The compact construction allows to combine multiple units in confined spaces, realizing a high power system. The control allows to coordinate up to 7 units managing automatically the operation with maximum efficiency.

Size – WSAT-XEM		50.4	55.4	60.4	65.4	70.4	80.4	90.4	100.4	110.4	120.4
SC-EXC	A - Length	mm	4400	4400	4400	4400	4400	4400	5200	5200	5200
SC-EXC	B - Width	mm	1812	1812	1812	1812	2250	2250	2250	2250	2250
SC-EXC	C - Height	mm	1800	1800	1800	1800	2300	2300	2300	2300	2300
SC-EXC	A1	mm	1300	1300	1300	1300	1500	1500	1500	1500	1500
SC-EXC	A2	mm	750	750	750	750	750	750	750	750	750
SC-EXC	B1	mm	1100	1100	1100	1100	1500	1500	1500	1500	1500
SC-EXC	B2	mm	1100	1100	1100	1100	1500	1500	1500	1500	1500
SC-EXC	Operating weight	kg	1466	1500	1548	1630	2317	2403	2527	2924	3126

Size – WSAN-XEM		70.4	80.4	90.4	100.4	110.4	120.4
SC-PRM	A - Length	mm	3800	3800	4400	4400	5200
SC-PRM	B - Width	mm	2250	2250	2250	2250	2250
SC-PRM	C - Height	mm	2300	2300	2300	2300	2300
SC-PRM	A1	mm	1500	1500	1500	1500	1500
SC-PRM	A2	mm	750	750	750	750	750
SC-PRM	B1	mm	1500	1500	1500	1500	1500
SC-PRM	B2	mm	1500	1500	1500	1500	1500
SC-PRM	Operating weight	kg	2135	2244	2328	2610	2698

Size – WSAN-XEM		50.4	55.4	60.4	65.4	70.4	80.4	90.4	100.4	110.4	120.4
EXC	A - Length	mm	4400	4400	4400	4400	4400	4400	5200	5200	5200
EXC	B - Width	mm	1812	1812	1812	1812	2250	2250	2250	2250	2250
EXC	C - Height	mm	1800	1800	1800	1800	2300	2300	2300	2300	2300
EXC	A1	mm	1300	1300	1300	1300	1500	1500	1500	1500	1500
EXC	A2	mm	750	750	750	750	750	750	750	750	750
EXC	B1	mm	1100	1100	1100	1100	1500	1500	1500	1500	1500
EXC	B2	mm	1100	1100	1100	1100	1500	1500	1500	1500	1500
EXC	Operating weight	kg	1590	1604	1673	1831	2420	2540	2681	3114	3338

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

SC-EXC Compressors soundproofing (SC)-Excellence

SC-PRM

Compressors soundproofing (SC)-Premium

versions and configurations

VERSION (WSAT-XEM ONLY):

- **EXC** Excellence (Standard)
- **PRM** Premium (sizes 70.4÷120.4)

ENERGY RECOVERY:

- **-** Energy recovery: not required (Standard)
- **D** Partial energy recovery
- **R** Total energy recovery (WSAT-XEM only)

ACOUSTIC CONFIGURATION (WSAT-XEM ONLY):

- **SC** Acoustic configuration with compressor soundproofing (Standard)
- **EN** Super-silenced acoustic configuration

technical data

Size - WSAT-XEM			50.4	55.4	60.4	65.4	70.4	80.4	90.4	100.4	110.4	120.4	
SC-EXC	▶ Cooling capacity (EN14511:2013)	(1)	kW	143	157	170	182	197	223	260	287	317	354
SC-EXC	Total power input(EN14511:2013)	(1)	kW	45,8	50,2	54,5	58,4	63,0	71,5	83,7	91,6	102	114
SC-EXC	EER (EN14511:2013)	(1)	-	3,12	3,13	3,12	3,11	3,12	3,12	3,10	3,13	3,10	3,10
SC-EXC	SEER	(4)	-	4,23	4,42	4,51	4,51	4,41	4,52	4,52	4,33	4,26	4,40
SC-EXC	Refrigeration circuits		Nr	2									
SC-EXC	No. of compressors		Nr	4									
SC-EXC	Type of compressors		-	SCROLL									
SC-EXC	Standard airflow		l/s	20722	19917	19900	19472	23856	22947	22944	33833	33611	33833
SC-EXC	Water flow-rate (User Side)		l/s	6,80	7,50	8,10	8,70	9,40	10,7	12,4	13,7	15,1	16,9
SC-EXC	Standard power supply		V	400/3/50+N							400/3/50		
SC-EXC	Sound pressure level	(3)	dB(A)	69	69	69	69	68	68	68	72	72	72
Size - WSAT-XEM			70.4	80.4	90.4	100.4	110.4	120.4					
SC-PRM	▶ Cooling capacity (EN14511:2013)	(1)	kW	183	207	242	261	288	330				
SC-PRM	Total power input (EN14511:2013)	(1)	kW	66,9	76,0	89,3	96,4	105	122				
SC-PRM	EER (EN14511:2013)	(1)	-	2,74	2,73	2,71	2,71	2,73	2,71				
SC-PRM	SEER	(4)	-	4,08	4,13	4,32	4,17	4,19	4,10				
SC-PRM	Refrigeration circuits		Nr	2									
SC-PRM	No. of compressors		Nr	4									
SC-PRM	Type of compressors		-	SCROLL									
SC-PRM	Standard airflow		l/s	23800	23550	24450	24450	23900	34450				
SC-PRM	Water flow-rate (User Side)		l/s	8,70	9,90	11,5	12,4	13,7	15,8				
SC-PRM	Standard power supply		V	400/3/50									
SC-PRM	Sound pressure level	(3)	dB(A)	67	67	68	68	68	71				
Size - WSAN-XEM			50.4	55.4	60.4	65.4	70.4	80.4	90.4	100.4	110.4	120.4	
EXC	▶ Cooling capacity (EN14511:2013)	(1)	kW	139	148	160	170	184	208	235	273	296	321
EXC	Total power input(EN14511:2013)	(1)	kW	48,7	53,6	58,4	63,7	67,6	77,0	92,7	98,1	110	126
EXC	EER (EN14511:2013)	(1)	-	2,85	2,76	2,73	2,66	2,72	2,70	2,54	2,79	2,69	2,55
EXC	SEER	(4)	-	3,99	4,00	4,04	4,07	3,94	4,08	4,08	3,93	3,91	3,85
EXC	▶ Heating capacity (EN14511:2013)	(2)	kW	155	167	183	194	210	239	274	313	340	378
EXC	Total power input (EN14511:2013)	(2)	kW	47,9	52,3	56,5	60,1	65,3	74,3	85,1	97,5	106	118
EXC	COP (EN14511:2013)	(2)	-	3,24	3,20	3,24	3,23	3,22	3,22	3,22	3,21	3,21	3,20
EXC	Refrigeration circuits		Nr	2									
EXC	No. of compressors		Nr	4									
EXC	Type of compressors		-	SCROLL									
EXC	Standard airflow		l/s	20300	20300	20000	20000	25000	24200	24200	35000	35000	35000
EXC	Water flow-rate (User Side)		l/s	6,70	7,10	7,70	8,10	8,80	10,0	11,2	13,1	14,2	15,5
EXC	Standard power supply		V	400/3/50+N							400/3/50		
EXC	Sound pressure level	(3)	dB(A)	69	69	69	69	68	68	68	72	72	72
Directive ErP (Energy Related Products)													
SCOP - AVERAGE Climate - W35	(4)	-		3,70	3,66	3,72	3,72	3,64	3,64	3,76	3,25	3,70	3,80

Notes

- (1) Data compliant to Standard EN 14511:2013 referred to the following conditions: - Internal exchanger water temperature = 12/7°C - Entering external exchanger air temperature = 35°C
- (2) Data compliant to Standard EN 14511:2013 referred to the following conditions: - Internal exchanger water temperature = 40/45°C - Entering external exchanger air temperature = 7°C D.B./6°C W.B.
- (3) The sound levels refer to the unit at full load, in the rated test conditions. The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature 35°C
- (4) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

- SC-EXC Compressors soundproofing (SC)-Excellence
- SC-PRM Compressors soundproofing (SC)-Premium

accessories

- **HYG1** Hydronic assembly with 1 ON/OFF pump
- **VARYP** VARYFLOW + (2 inverter pumps)
- **HYG2** Hydronic assembly with 2 ON/OFF pumps
- **ACC** Storage tank
- **CCCA** Copper / aluminium condenser coil with acrylic lining
- **CCCA1** Condenser coil with Aluminium Energy Guard DCC treatment
- **HEDIF** Diffuser for high efficiency axial fan (sizes 70.4÷120.4)
- **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type (sizes 70.4÷120.4)
- **SFSTR** Disposal for inrush current reduction
- **MF2** Multi-function phase monitor
- **CMSC10** Serial communication module for LonWorks supervisor
- **CMSLWX** LonWorks serial communication module
- **CMSC8** Serial communication module for BACnet supervisor
- **BACX** BACnet serial communication module
- **CMSC9** Serial communication module for Modbus supervisor

- **CMMBX** Serial communication module to supervisor (Modbus)
- **PFCP** Power factor correction capacitors (cosφ > 0.9)
- **PGFC** Finned coil protection grilles
- **PGFCX** Finned coil protection grilles
- **MHP** High and low pressure gauges
- **MHPX** High and low pressure gauges
- **IFWX** Steel mesh strainer on the water side
- **RCTX** Remote control
- **AVIBX** Anti-vibration mount support

WSAN-XEM only:

- **VACSUX** User side DHW switching valve

WSAT-XEM only:

- **CREFO** Device for fan consumption reduction of the external section, on/off type (sizes 70.4÷120.4)
- **SDV** Cutoff valve on compressor supply and return
- **RPRPDI** Refrigerant leak detector with pump down function in the casing

Key to symbols:

- Accessories separately supplied

Multifunction reversible heat pump

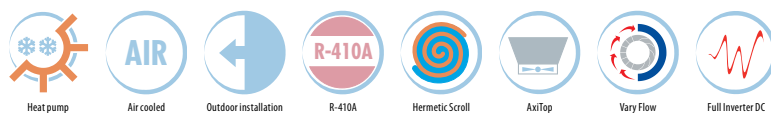
Air cooled

Outdoor installation

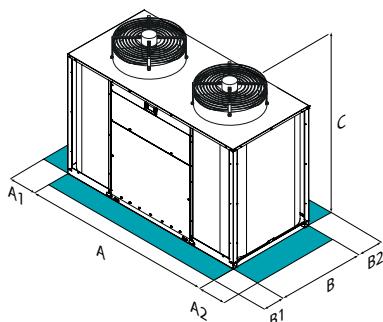
Capacity from 49,8 to 120 kW



functions and features



dimensions and clearances



CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

ELFOEnergy Magnum MF

The **ELFOEnergy Magnum Multifunction** heat pumps are high efficiency packaged units for small and medium-sized applications in the services sector that **can generate thermal and cooling energy simultaneously and independently**.

Designed for outdoor installation, they ensure extremely high efficiency levels during the entire operating cycle thanks to the combination of **continuous capacity modulation**, which adapts the capacity supplied to the actual energy demand required by the system, and **energy recovery**, which recovers up to 100% of the capacity supplied, further increasing efficiency.

ELFOEnergy Magnum Multifunction is available in the EXCELLENCE version that offers the highest energy efficiency both during the seasonal cycle and under full load conditions.

Benefits of ELFOEnergy Magnum Multifunction:

- **HIGH UNIT RELIABILITY**, thanks to the double refrigerant circuit, to the proven architecture and to the components produced at high volumes.
- **ADVANCED TECHNOLOGY**: The modulating pumping unit developed by Clivet, consisting of two parallel pumps controlled by an inverter, allows for lower consumption and at the same time ensures operation even under critical conditions. It automatically reduces the water flow rate according to the load required by the system, by controlling the pressure or temperature, and prevents blocks due to overloads in the event of critical conditions.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE**: The compact construction allows to combine multiple units in confined spaces, realizing a high power system. The control allows to coordinate up to 7 units managing automatically the operation with maximum efficiency.

Size – WSAN-XIN MF		18.2	20.2	25.2	30.2	35.2	40.2	45.2
A - Length	mm	2400	2400	2400	2400	3600	3600	3600
B - Width	mm	1100	1100	1100	1100	1100	1100	1100
C - Height	mm	1540	1540	1790	1790	1890	1890	1890
A1	mm	800	800	800	800	800	800	800
A2	mm	800	800	800	800	800	800	800
B1	mm	800	800	800	800	800	800	800
B2	mm	800	800	800	800	800	800	800
Operating weight	kg	650	660	720	755	934	977	1093

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

ENERGY RECOVERY:

- **R** Total energy recovery (Standard)

CONFIGURATION:

- **4T** Configuration for 4-pipe system (Standard)
- **2T** Configuration for 2-pipe system

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

- **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type (Standard)

technical data

Size – WSAN-XIN MF			18.2	20.2	25.2	30.2	35.2	40.2	45.2
COOLING 0% - HEATING 100%									
Heating capacity	(1)	kW	56,8	69,4	79,4	94,5	108	125	142
Compressor power input	(1)		14,7	18,3	20,8	25,3	29,2	33,5	38,8
Total power input	(1)	kW	16,9	20,5	23,7	28,2	32,1	36,9	42,2
COP at full load	(1)	-	3,36	3,38	3,35	3,35	3,37	3,37	3,36
COOLING 100% - HEATING 0%									
Cooling capacity	(2)	kW	49,8	59,6	69,7	82,5	92,8	106	120
Compressor power input	(2)		14,5	18,1	20,5	25,6	30,4	35,0	42,2
Total power input	(2)	kW	16,7	20,3	23,4	28,5	33,3	38,4	45,6
EER at full load	(2)	-	2,98	2,94	2,98	2,90	2,79	2,76	2,63
SEER	(6)	-	3,34	3,43	3,47	3,63	3,72	3,70	3,79
COOLING 100% - HEATING 100%									
Cooling capacity	(3)	kW	49,9	59,8	69,7	82,9	95,9	109	128
Heating capacity	(3)	kW	64,7	77,7	90,4	107	125	141	167
Total power input	(3)	kW	14,8	17,9	20,7	24,5	28,7	32,7	38,3
Overall efficiency	(4)	-	7,73	7,69	7,72	7,76	7,69	7,66	7,71
Refrigeration circuits	Nr		2						
No. of compressors	Nr		2						
Type of compressors	-		INVERTER + ON/OFF SCROLL						
Standard power supply	V		400/3/50+N						
Sound pressure level	(5)	dB(A)	65	65	66	66	68	68	69
Directive ErP (Energy Related Products)									
ErP Energy Class - AVERAGE Climate - W35	-		A+	A+	A+	A+	-	-	-
SCOP - AVERAGE Climate - W35	(6)	-	3,69	3,74	3,59	3,75	3,83	3,80	3,96

Notes

- (1) Data refer to the following conditions: internal water exchanger = 40/45°C; outdoor air temperature 7°C D.B. / 6°C W.B.
- (2) Data refer to the following conditions: internal water exchanger = 12/7 °C; outdoor air temperature 35°C
- (3) Data referred to the following conditions: - internal exchanger water (evaporator) = 12/7°C - external exchanger water (condenser) = 40/45°C
- (4) Overall efficiency = (Cooling capacity + Heating capacity) / (Total power input)
- (5) Sound levels refer to units with full load under nominal test conditions. The sound pressure level refers to a distance of 1 meter from the outer surface of the unit operating in open field. Noise levels are determined using the tensiometric method (UNI EN ISO 9614-2); Data refer to the following conditions: internal water exchanger = 12/7 °C; outdoor air temperature 35°C

- (6) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rate heat output ≤70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

accessories

- **CCCA** Copper / aluminium condenser coil with acrylic lining
- **CCCA1** Condenser coil with Aluminium Energy Guard DCC treatment
- **HYG1** Hydronic assembly with 1 ON/OFF pump
- **HYG2** Hydronic assembly with 2 ON/OFF pumps
- **VARYP** VARYFLOW + (2 inverter pumps)
- **HYGR1V** Recovery side hydronic assembly with 1 inverter pump
- **HYGU1V** User side hydronic assembly with 1 inverter pump
- **ACC** Storage tank (sizes 35.2÷45.2)
- **VACSR** Total recovery side DHW switching valve
- **HEDIF** Diffuser for high efficiency axial fan
- **CMSC10** Serial communication module for LonWorks supervisor
- **CMSC8** Serial communication module for BACnet supervisor
- **CMSC9** Serial communication module for Modbus supervisor

- **CMMBX** Serial communication module to supervisor (Modbus)
- **CMSLWX** LonWorks serial communication module
- **BACX** BACnet serial communication module
- **MF2** Multi-function phase monitor
- **SFSTR4N** Disposal for inrush current reduction, for unit 400/3/50+N
- **RCTX** Remote control
- **MHP** High and low pressure gauges
- **MHPX** High and low pressure gauges
- **PGFC** Finned coil protection grilles
- **PGFCX** Finned coil protection grilles
- **AVIBX** Anti-vibration mount support
- **IFWX** Steel mesh strainer on the water side
- **PFCX** Power factor correction capacitors (cosφ > 0.9)

Key to symbols:

- Accessories separately supplied

Multifunction reversible heat pump

Air cooled

Outdoor installation

Capacity from 139 to 324 kW



functions and features



Heat pump



Air cooled



Outdoor installation



R-410A



Hermetic Scroll

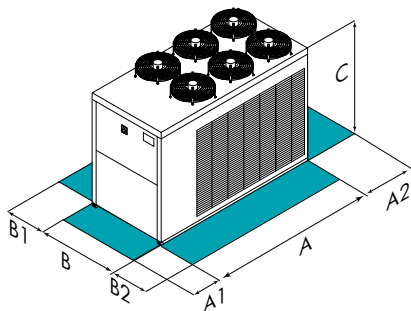


AxiTop



Vary Flow

dimensions and clearances



Size – WSAN-XEM MF		50.4	55.4	60.4	65.4	70.4	80.4	90.4	100.4	110.4	120.4
A - Length	mm	4450	4450	4450	4450	4450	4450	4450	5250	5250	5250
B - Width	mm	1812	1812	1812	1812	2250	2250	2250	2250	2250	2250
C - Height	mm	1800	1800	1800	1800	2300	2300	2300	2300	2300	2300
A1	mm	1300	1300	1300	1300	1500	1500	1500	1500	1500	1500
A2	mm	750	750	750	750	750	750	750	750	750	750
B1	mm	1100	1100	1100	1100	1500	1500	1500	1500	1500	1500
B2	mm	1100	1100	1100	1100	1500	1500	1500	1500	1500	1500
Operating weight	kg	1803	1825	1908	2073	2630	2750	2908	3467	3553	3694

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAUTION!For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

ELFOEnergy Magnum MF

The **ELFOEnergy Magnum Multifunction** heat pumps are high efficiency packaged units for small and medium-sized applications in the services sector that **can generate thermal and cooling energy simultaneously and independently**.

Designed for outdoor installation, they ensure extremely high efficiency levels during the entire operating cycle **thanks to energy recovery**, which recovers up to 100% of the capacity supplied, further increasing efficiency.

ELFOEnergy Magnum Multifunction is available in the EXCELLENCE version that offers the highest energy efficiency both during the seasonal cycle and under full load conditions.

Benefits of ELFOEnergy Magnum Multifunction:

- **HIGH UNIT RELIABILITY**, thanks to the double refrigerant circuit, to the proven architecture and to the components produced at high volumes.
- **ADVANCED TECHNOLOGY**: The modulating pumping unit developed by Clivet, consisting of two parallel pumps controlled by an inverter, allows for lower consumption and at the same time ensures operation even under critical conditions. It automatically reduces the water flow rate according to the load required by the system, by controlling the pressure or temperature, and prevents blocks due to overloads in the event of critical conditions.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE**: The compact construction allows to combine multiple units in confined spaces, realizing a high power system. The control allows to coordinate up to 7 units managing automatically the operation with maximum efficiency.

versions and configurations

ENERGY RECOVERY:

- **R** Total energy recovery (Standard)

CONFIGURATION:

- **4T** Configuration for 4-pipe system (Standard)
- **2T** Configuration for 2-pipe system

technical data

Size – WSA-N-XEM MF			50.4	55.4	60.4	65.4	70.4	80.4	90.4	100.4	110.4	120.4
COOLING 0% - HEATING 100%												
Heating capacity	(1)	kW	157	169	185	197	213	243	278	318	345	381
Compressor power input	(1)	kW	41,5	45,6	49,7	53,2	56,6	65,3	75,9	84,0	91,6	104
Total power input	(1)	kW	46,4	50,5	54,6	58,1	63,0	71,7	82,1	93,7	101	113
COP	(1)	-	3,39	3,35	3,38	3,39	3,38	3,39	3,39	3,40	3,41	3,38
COOLING 100% - HEATING 0%												
Cooling capacity	(2)	kW	139	149	160	170	184	209	236	275	297	324
Compressor power input	(2)	kW	43,3	48,2	52,8	58,2	60,4	69,4	85,2	86,7	98,3	114
Total power input	(2)	kW	48,2	53,1	57,7	63,1	66,8	75,8	91,6	96,4	108	124
EER	(2)	-	2,89	2,81	2,78	2,70	2,76	2,76	2,58	2,85	2,75	2,62
SEER	(6)	-	3,99	4,00	4,04	4,07	3,96	4,11	4,10	3,95	3,91	3,85
COOLING 100% - HEATING 100%												
Cooling capacity	(3)	kW	140	151	162	172	187	212	239	278	300	328
Heating capacity	(3)	kW	182	196	214	228	246	281	322	367	397	442
Total power input	(3)	kW	40,3	44,3	48,1	52,5	54,8	63,2	76,0	80,3	89,2	102
Overall efficiency	(4)	-	7,99	7,84	7,81	7,62	7,89	7,80	7,39	8,04	7,81	7,53
Refrigeration circuits	Nr		2									
No. of compressors	Nr		4									
Type of compressors	-		SCROLL									
Standard power supply	-		400/3/50+N					400/3/50				
Sound pressure level	(5)	dB(A)	69	69	69	69	68	68	68	72	72	72
Directive ErP (Energy Related Products)												
SCOP - AVERAGE Climate - W35	(6)	-	3,85	3,81	3,86	3,87	3,78	3,79	3,91	3,36	3,85	3,95

Note

- Data refer to the following conditions: internal water exchanger = 40/45°C; outdoor air temperature 7°C D.B. / 6°C W.B.
- Data refer to the following conditions: internal water exchanger = 12/7 °C; outdoor air temperature 35°C
- Data referred to the following conditions: - internal exchanger water (evaporator) = 12/7°C - external exchanger water (condenser) = 40/45°C
- Overall efficiency = (Cooling capacity + Heating capacity) / (Total power input)
- Sound levels refer to units with full load under nominal test conditions. The sound pressure level refers to a distance of 1 meter from the outer surface of the unit operating in open field.

- Noise levels are determined using the tensiometric method (UNI EN ISO 9614-2); Data refer to the following conditions: internal water exchanger = 12/7 °C; outdoor air temperature 35°C
- Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rate heat output ≤70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

accessories

- **HYG1** Hydronic assembly unit with 1 ON/OFF pump
- **HYG2** Hydronic assembly unit with 2 ON/OFF pumps
- **VARYP** VARYFLOW + (2 inverter pumps)
- **HYGR1V** Recovery side hydronic unit with 1 inverter pump
- **ACC** Storage tank
- **CCCA** Copper / aluminium condenser coil with acrylic lining
- **CCCA1** Condenser coil with Aluminium Energy Guard DCC treatment
- **HEDIF** Diffuser for high efficiency axial fan (sizes 70.4÷120.4)
- **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type (sizes 70.4÷120.4)
- **SFSTR** Disposal for inrush current reduction
- **MF2** Multi-function phase monitor
- **CMSC10** Serial communication module for LonWorks supervisor
- **CMSLWX** LonWorks serial communication module

- **CMSC8** Serial communication module for BACnet supervisor
- **BACX** BACnet serial communication module
- **CMSC9** Serial communication module for Modbus supervisor
- **CMMBX** Serial communication module to supervisor (Modbus)
- **PFCP** Power factor correction capacitors (cosφ > 0.9)
- **PGFC** Finned coil protection grill
- **PGFCX** Finned coil protection grill
- **MHP** High and low pressure gauges
- **MHPX** High and low pressure gauges
- **VACSRX** Total recovery side DHW switching valve
- **IFWX** Steel mesh strainer on the water side
- **RCTX** Remote control
- **AVIBX** Anti-vibration mount support

Key to symbols:

- Accessories separately supplied

Reversible heat pump

Air cooled

Outdoor installation

Capacity from 85,8 to 150 kW



ELFOEnergy Magnum HW

ELFOEnergy Magnum HW is a series of high temperature heat pumps, ideal for heating, cooling and hot water solution for centralised systems.

Benefits of ELFOEnergy Magnum HW:

- **HIGH UNIT RELIABILITY**, thanks to the double refrigerant circuit, to the proven architecture and to the components produced at high volumes.
- **EXTENDED OPERATING RANGE**: Operation with outdoor air temperature down to -20°C and hot water production at 55°C. Hot water production up to 65°C at outdoor temperatures of down to -13°C.
- **ADVANCED TECHNOLOGY**: The modulating pumping unit developed by Clivet, consisting of two parallel pumps controlled by an inverter, allows for lower consumption and at the same time ensures operation even under critical conditions. It automatically reduces the water flow rate according to the load required by the system, by controlling the pressure or temperature, and prevents blocks due to overloads in the event of critical conditions.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE**: The compact construction allows to combine multiple units in confined spaces, realizing a high power system. The control allows to coordinate up to 7 units managing automatically the operation with maximum efficiency.



Unit listed on
www.eurovent-certification.com



ErP compliant

functions and features



Heat pump



Air cooled



Outdoor installation



R-410A



Hermetic Scroll

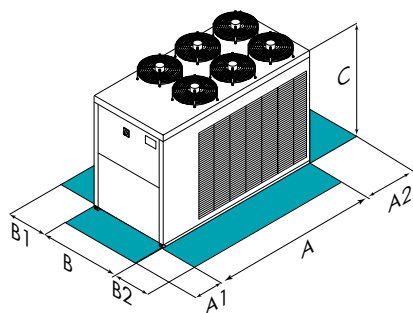


AxiTop



Vary Flow

dimensions and clearances



Size – WSAN-XEM HW		35.4	40.4	45.4	50.4	55.4	60.4
A - Length	mm	3400	3400	3400	3400	4400	4400
B - Width	mm	1812	1812	1812	1812	1812	1812
C - Height	mm	1800	1800	1800	1800	1800	1800
A1	mm	1300	1300	1300	1300	1300	1300
A2	mm	750	750	750	750	750	750
B1	mm	1100	1100	1100	1100	1100	1100
B2	mm	1100	1100	1100	1100	1100	1100
Operating weight	kg	1285	1418	1441	1444	1735	1739

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

ENERGY RECOVERY:

- ▶ - Energy recovery: not required (Standard)
- ▶ D Partial energy recovery

technical data

Size – WSAN-XEM HW			35.4	40.4	45.4	50.4	55.4	60.4
▶ Cooling capacity (EN14511:2013)	(1)	kW	85,8	98,3	110	118	131	150
Total power input (EN14511:2013)	(1)	kW	31,5	35,4	37,5	41,7	48,4	54,8
EER (EN 14511:2013)	(1)	-	2,73	2,78	2,93	2,83	2,71	2,73
SEER	(4)	-	2,93	3,35	3,50	3,31	3,28	3,09
▶ Heating capacity (EN14511:2013)	(2)	kW	109	123	134	144	165	185
Total power input (EN14511:2013)	(2)	kW	31,8	34,9	37,9	41,6	48,2	54,5
COP (EN 14511:2013)	(2)	-	3,43	3,52	3,53	3,45	3,42	3,39
Refrigeration circuits	Nr		2					
No. of compressors	Nr		4					
Type of compressors	-		SCROLL					
Standard airflow	l/s		16000	15567	15567	15567	20733	20733
Water flow-rate (User Side)	l/s		4,10	4,70	5,30	5,70	6,30	7,20
Standard power supply	V		400/3/50+N					
Sound pressure level	(3)	dB(A)	67	67	67	67	69	69
Directive ErP (Energy Related Products)								
SCOP - AVERAGE Climate - W35	(4)	-	3,52	3,95	3,90	3,88	3,54	3,64
SCOP - AVERAGE Climate - W55	(4)	-	3,03	3,19	3,15	3,22	3,12	3,04

Notes

- (1) Data compliant to Standard EN 14511:2013 referred to the following conditions: - Internal exchanger water temperature = 12/7°C - Entering external exchanger air temperature = 35°C
- (2) Data compliant to Standard EN 14511:2013 referred to the following conditions: - Internal exchanger water temperature = 40/45°C - Entering external exchanger air temperature = 7°C D.B./6°C W.B
- (3) The sound levels refer to the unit at full load, in the rated test conditions. The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature 35°C

- (4) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rate heat output ≤70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

accessories

- ▶ **VARYP** VARYFLOW + (2 inverter pumps)
- ▶ **HYG1** Hydronic assembly with 1 ON/OFF pump
- ▶ **HYG2** Hydronic assembly with 2 ON/OFF pumps
- **VACSUX** User side DHW switching valve
- ▶ **ACC** Storage tank
- ▶ **CCCA** Copper / aluminium condenser coil with acrylic lining
- ▶ **CCCA1** Condenser coil with Aluminium Energy Guard DCC treatment
- ▶ **SFSTR** Disposal for inrush current reduction
- ▶ **MF2** Multi-function phase monitor
- ▶ **CMSC10** Serial communication module for LonWorks supervisor
- **CMSLWX** LonWorks serial communication module
- ▶ **CMSC8** Serial communication module for BACnet supervisor
- **BACX** BACnet serial communication module
- ▶ **CMSC9** Serial communication module for Modbus supervisor
- **CMMBX** Serial communication module for supervisor (Modbus)
- ▶ **PFCP** Power factor correction capacitors (cosφ > 0.9)
- ▶ **PGFC** Finned coil protection grill
- **PGFCX** Finned coil protection grill
- ▶ **MHP** High and low pressure gauges
- **MHPX** High and low pressure gauges
- **IFWX** Steel mesh strainer on the water side
- **RCTX** Remote control
- **AVIBX** Anti-vibration mount support

Key to symbols:

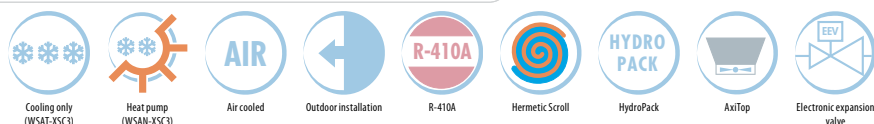
- Accessories separately supplied

Water chiller

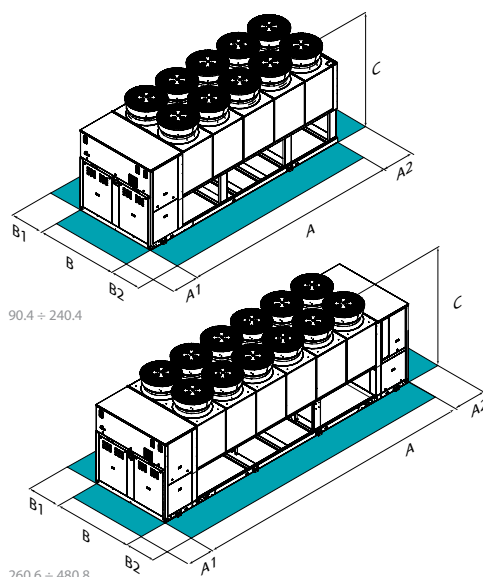
WSAT-XSC3: cooling only
WSAN-XSC3: reversible heat pump
Air cooled
Outdoor installation
Capacity from 243 to 1350 kW



functions and features



dimensions and clearances



CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

SPINchiller³

The SPINchiller³ heat pumps and liquid chillers ensure maximum energy efficiency over the entire operation cycle.

- **MODULAR SCROLL TECHNOLOGY** - Designed for outdoor installation, SPINchiller³ employs modular Scroll technology with several compressors on the same refrigeration circuit, electronic expansion valves and plate evaporators with highly efficient heat exchange. It stands out for the very high SEER efficiency during the seasonal operation cycle.
- **DUAL ENERGY VERSION** - The standard EXCELLENCE version with a class A Eurovent rating offers the highest energy efficiency both during the seasonal cycle and under full load conditions. The PREMIUM version also provides excellent performance under partial load conditions, but has a compact design which gives it an additional competitive edge.
- **FOR ALL SYSTEM APPLICATIONS** - SPINchiller³ is available in four distinct series: Liquid chiller, Liquid chiller with direct free-cooling or glycol-free, Reversible heat pump, Multifunction heat pump to simultaneously generate chilled water, hot water and domestic water. All models have a dual refrigeration circuit.
- **SILENT** - The low sound emissions are the result of the optimal size of the exchange surfaces, the use of high efficiency fans fitted with wing profiles with "winglets" and the innovative AxiTop diffusers with kinetic energy recovery.
- **INDUSTRIALISED SYSTEM** - The units can be installed easily and quickly thanks to the quick connections towards the user circuit, to the fact that they are already set up for electrical connections and thanks to the full operating test before shipping. They can also be provided with pumping units already installed, thereby integrating all the main components of the system in a single solution.

Size – WSAT-XSC3		90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4	260.6	280.6	300.6	320.6	340.6	360.6	400.8	440.8	480.8
SC-EXC	A - Length	mm	4149	4149	4149	4149	5124	5124	5124	5994	5994	5994	7948	7948	9900	9900	9900	9900	11989	11989
SC-EXC	B - Width	mm	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243
SC-EXC	C - Height	mm	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668
SC-EXC	A1	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
SC-EXC	A2	mm	700	700	700	700	700	700	700	700	700	700	1500	1500	1500	1500	1500	1500	1500	1500
SC-EXC	B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-EXC	B2	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-EXC	Operating weight	kg	2704	2836	2869	2979	3428	3528	3899	4384	4538	4676	5837	5963	6692	6881	7138	7375	8768	9352

Size – WSAT-XSC3		120.4	140.4	160.4	180.4	200.4	220.4	240.4	260.6	280.6	300.6	320.6	340.6	360.6	400.8	440.8	480.8
SC-PRM	A - Length	mm	4149	4149	4149	5124	5124	5994	5994	6973	6973	7948	7948	7948	10243	11989	11989
SC-PRM	B - Width	mm	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243
SC-PRM	C - Height	mm	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668
SC-PRM	A1	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
SC-PRM	A2	mm	700	700	700	700	700	700	700	1500	1500	1500	1500	1500	1500	1500	1500
SC-PRM	B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-PRM	B2	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-PRM	Operating weight	kg	2839	2984	3070	3609	3754	4296	4510	5413	5527	5982	6119	6338	7508	8592	9020

Size – WSAN-XSC3		90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4	260.8	280.8	300.8	320.8	340.8	360.8	400.8	440.8	480.8
SC-EXC	A - Length	mm	4149	4149	4149	4149	5124	5124	6050	6050	6400	6400	9268	10243	10243	10243	11114	11989	11989	12822
SC-EXC	B - Width	mm	2243	2243	2243	2243	2243	2243	2243	2243	2243	2246	2246	2246	2246	2246	2246	2246	2246	2246
SC-EXC	C - Height	mm	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668
SC-EXC	A1	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
SC-EXC	A2	mm	700	700	700	700	700	700	700	700	700	700	1500	1500	1500	1500	1500	1500	1500	1500
SC-EXC	B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-EXC	B2	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-EXC	Operating weight	kg	2928	2968	3028	3162	3588	3602	4347	4399	4816	4956	6750	7175	7189	7203	7948	8693	8797	9631

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

SC-EXC Compressors soundproofing (SC)-Excellence

SC-PRM

Compressors soundproofing (SC)-Premium

versions and configurations

LOW TEMPERATURE:

- - Low temperature: not required (Standard)
- B Water low temperature

VERSION:

- EXC Excellence (Standard)
- PRM Premium (WSAT-XSC3 only) (sizes 120.4÷480.8)

ENERGY RECOVERY:

- - Energy recovery: not required (Standard)
- D Partial energy recovery
- R Total energy recovery (WSAT-XSC3 only)

ACOUSTIC CONFIGURATION:

- SC Acoustic configuration with compressor soundproofing (Standard)
- EN Extremely low noise acoustic configuration

TYPE FAN EXTERNAL SECTION:

- AXIX High efficiency diffuser for axial fan - AxITop (Standard)
- NAXI High efficiency diffuser for axial fan - AxITop: not required

technical data

Size – WSAT-XSC3				90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4	260.6	280.6	300.6	320.6	340.6	360.6	400.8	440.8	480.8
SC-EXC	▶ Cooling capacity (EN14511:2013)	(1)	kW	267	290	316	353	405	459	513	572	621	675	734	791	852	905	961	1016	1143	1242	1350
SC-EXC	Total power input (EN14511:2013)	(1)	kW	85,8	92,9	102	114	130	145	165	181	200	218	236	253	274	292	309	328	362	400	435
SC-EXC	EER (EN14511:2013)	(1)	-	3,11	3,12	3,10	3,10	3,11	3,16	3,10	3,16	3,10	3,10	3,10	3,11	3,12	3,11	3,10	3,10	3,16	3,10	3,10
SC-EXC	SEER	(4)	-	4,64	4,65	4,62	4,56	4,66	4,65	4,59	4,64	4,62	4,56	4,61	4,59	4,60	4,65	4,62	4,56	4,66	4,62	4,56
SC-EXC	Refrigeration circuits	Nr		2																4		
SC-EXC	No. of compressors	Nr		4												6				8		
SC-EXC	Type of compressors	-		SCROLL																		
SC-EXC	Standard power supply	I/s		36628	36204	36187	34999	48272	46666	45657	58332	57703	57073	73120	72035	97494	96046	95118	94191	116663	115405	114147
SC-EXC	Water flow-rate (User side)	I/s		12,8	13,9	15,2	16,9	19,4	22,0	24,6	27,4	29,8	32,4	35,0	37,8	40,7	43,3	45,9	48,5	54,6	59,4	64,5
SC-EXC	Standard power supply	V		400/3~/50																		
SC-EXC	Sound pressure level	(3)	dB(A)	72	72	72	72	72	73	74	74	74	75	73	73	75	75	75	76	75	75	76

Size – WSAT-XSC3				120.4	140.4	160.4	180.4	200.4	220.4	240.4	260.6	280.6	300.6	320.6	340.6	360.6	400.8	440.8	480.8			
SC-PRM	▶ Cooling capacity (EN14511:2013)	(1)	kW	333	379	421	490	529	594	645	693	742	798	848	895	942	1058	1187	1291			
SC-PRM	Total power input (EN14511:2013)	(1)	kW	120	136	151	174	189	211	229	246	265	287	306	326	346	382	427	462			
SC-PRM	EER (EN14511:2013)	(1)	-	2,77	2,80	2,78	2,82	2,80	2,81	2,82	2,81	2,79	2,78	2,77	2,75	2,72	2,77	2,78	2,80			
SC-PRM	SEER	(4)	-	4,21	4,19	4,17	4,32	4,22	4,19	4,15	4,42	4,39	4,37	4,35	4,35	4,34	4,22	4,19	4,15			
SC-PRM	Refrigeration circuits	Nr		2												4						
SC-PRM	No. of compressors	Nr		4												8						
SC-PRM	Type of compressors	-		SCROLL																		
SC-PRM	Standard power supply	I/s		37459	37103	36017	49946	49471	62135	60028	60934	60029	73120	72035	71339	70643	98941	124271	120057			
SC-PRM	Water flow-rate (User side)	I/s		15,9	18,1	20,1	23,4	25,3	28,4	30,8	32,9	35,3	38,0	40,3	42,6	44,8	50,3	56,5	61,5			
SC-PRM	Standard power supply	V		400/3~/50																		
SC-PRM	Sound pressure level	(3)	dB(A)	72	72	73	74	74	74	75	72	73	74	74	75	75	76	75	76			

Size – WSAN-XSC3				90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4	260.8	280.8	300.8	320.8	340.8	360.8	400.8	440.8	480.8
SC-EXC	▶ Cooling capacity (EN14511:2013)	(1)	kW	243	262	290	322	369	416	473	518	557	593	692	739	785	831	888	945	1037	1115	1186
SC-EXC	Total power input (EN14511:2013)	(1)	kW	88,7	96,1	105	119	137	151	175	189	206	226	256	273	288	303	326	350	378	412	453
SC-EXC	EER (EN14511:2013)	(1)	-	2,74	2,73	2,75	2,70	2,70	2,75	2,70	2,74	2,70	2,62	2,70	2,70	2,73	2,75	2,72	2,70	2,74	2,70	2,62
SC-EXC	SEER	(4)	-	4,13	4,12	4,11	4,13	4,14	4,12	4,20	4,21	4,19	4,11	4,16	4,21	4,20	4,19	4,20	4,20	4,21	4,19	4,11
SC-EXC	▶ Heating capacity (EN14511:2013)	(2)	kW	283	312	340	378	426	471	543	600	646	696	803	852	897	942	1014	1086	1201	1292	1391
SC-EXC	Total power input (EN14511:2013)	(2)	kW	88,5	97,1	105	115	131	145	169	184	202	217	246	261	275	290	314	338	369	404	435
SC-EXC	COP (EN 14511:2013)	(2)	-	3,20	3,22	3,22	3,28	3,26	3,25	3,22	3,25	3,20	3,20	3,27	3,26	3,26	3,25	3,23	3,22	3,25	3,20	3,20
SC-EXC	Refrigeration circuits	Nr		2												4						
SC-EXC	No. of compressors	Nr		4												8						
SC-EXC	Type of compressors	-		SCROLL																		
SC-EXC	Standard power supply	I/s		37357	37357	36797	36365	49807	49063	62677	61219	60854	60489	86172	99614	98871	98127	111741	125354	122438	121708	120979
SC-EXC	Water flow-rate (User side)	I/s		11,7	12,6	13,9	15,4	17,7	19,9	22,7	24,8	26,7	28,4	33,0	35,3	37,5	39,7	42,4	45,2	49,5	53,3	56,7
SC-EXC	Standard power supply	V		400/3~/50																		
SC-EXC	Sound pressure level	(3)	dB(A)	72	72	72	72	72	73	74	74	74	75	73	73	74	74	74	75	75	75	75
Directive ErP (Energy Related Products)																						
SCOP - AVERAGE Climate W35	(4)	-		3,80	3,81	3,82	3,72	3,85	3,71	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes

- (1) Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: Internal exchanger water temperature = 12/7°C; Entering external exchanger air temperature = 35°C
- (2) Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: Internal exchanger water temperature = 40/45°C. Entering external exchanger air temperature = 7°C D.B./6°C W.B.
- (3) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data refer to the following conditions: internal water exchanger = 12/7 °C; outdoor air temperature 35°C
- (4) Data calculated according to the EN 14825:2016 Regulation

- SC-EXC Compressors soundproofing (SC)-Excellence
SC-PRM Compressors soundproofing (SC)-Premium

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

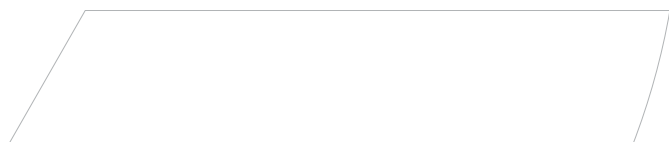
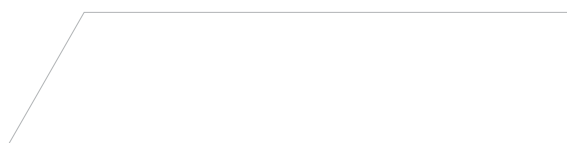
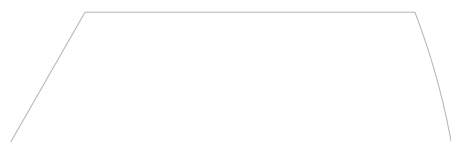
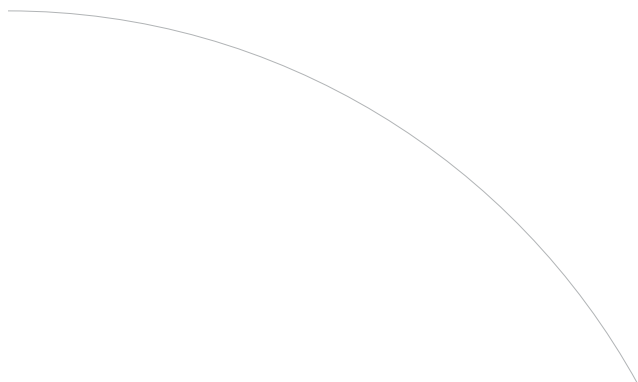
accessories

- ▶ **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type
 - ▶ **2PM** Hydropack user side with 2 pumps
 - ▶ **3PM** Hydropack user side with 3 pumps
 - ▶ **2PMV** Hydropack user side with no.2 of inverter pumps
 - ▶ **3PMV** Hydropack user side with no.3 of inverter pumps
 - ▶ **4PM** Hydropack user side with 4 pumps
 - ▶ **6PM** Hydropack user side with 6 pumps
 - ▶ **6PMV** Hydropack user side with 6 inverter pumps
 - ▶ **IVFDT** Inverter driven variable flow-rate user side control depending on the temperature differential
 - ▶ **IFWX** Steel mesh strainer on the water side
 - ▶ **CSVX** Couple of manually operated shut-off valves
 - ▶ **A550** 550 l. storage tank
 - ▶ **A700** 700 l. storage tank
 - ▶ **CCCA** Copper / aluminium condenser coil with acrylic lining
 - ▶ **CCCA1** Condenser coil with Aluminium Energy Guard DCC treatment
 - ▶ **AMMX** Spring antivibration mounts
 - ▶ **PGFC** Finned coil protection grill
 - ▶ **PGCCH** Anti-hail protection grilles
 - ▶ **CONTA2** Energy meter
 - ▶ **RPRPDI** Refrigerant leak detector with pump down function in the casing
 - ▶ **RCMRX** Remote control via microprocessor control
 - ▶ **PSX** Mains power supply
 - ▶ **CMSC10** Serial communication module for LonWorks supervisor
 - ▶ **CMSC9** Serial communication module for Modbus supervisor
 - ▶ **CMSC11** Serial communication module for BACnet-IP supervisor
 - ▶ **SCP4** Set-point compensation with 0-10 V signal
 - ▶ **SPC2** Set-point compensation with outdoor air temperature probe
 - ▶ **ECS** ECOSHARE function for the automatic management of a group of units
 - ▶ **PFCP** Power factor correction capacitors (cosφ > 0.9)
 - ▶ **SFSTR** Disposal for inrush current reduction
 - ▶ **RE-20** Electrical panel antifreeze protection for min. outdoor temperature down to -20°C
 - ▶ **RE-25** Electrical panel antifreeze protection for min. outdoor temperature down to -25°C
 - ▶ **RE-30** Electrical panel antifreeze protection for min. outdoor temperature down to -30°C
 - ▶ **RE-35** Electrical panel antifreeze protection for min. outdoor temperature down to -35°C
 - ▶ **RE-39** Electrical panel antifreeze protection for min. outdoor temperature down to -39°C
 - ▶ **MHP** High and low pressure gauges
 - ▶ **SDV** Cutoff valve on compressor supply and return
 - ▶ **A900** 900 l. storage tank
 - ▶ **A1800** 1800 l. storage tank
 - ▶ **PM** Phase monitor
 - ▶ **MF2** Multi-function phase monitor
 - ▶ **PSPS** Set up for single power supply
- WSAT-XSC3 only:**
- ▶ **CREFO** Device for fan consumption reduction of the external section, on/off type
 - ▶ **REGBT** Device for the condensing coil partialization
- WSAN-XSC3 only:**
- ▶ **A1200** 1200 l. storage tank
 - ▶ **A1400** 1400 l. storage tank
 - ▶ **A1600** 1600 l. storage tank
 - ▶ **OHE** Limit extension kit in heating up to -10°C (W.B.)

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.



Multifunction reversible heat pump

Air cooled

Outdoor installation

Capacity from 259 to 1300 kW

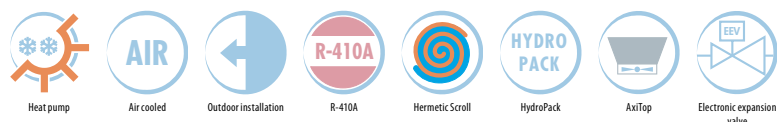
SPINchiller³ MF

SPINCHILLER³ MULTIFUNCTION is the high efficiency packaged unit for centralized systems able to produce heating and cooling energy both simultaneously and independently.

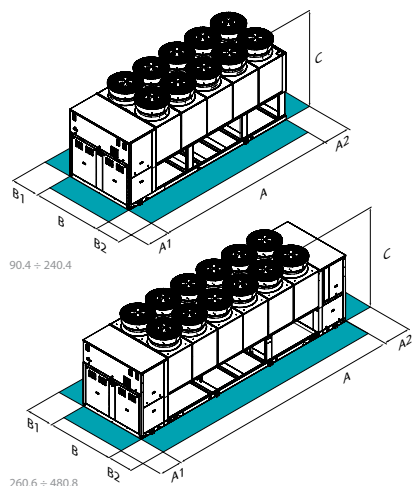
- **VERSATILE AND EFFICIENT** - Thanks to the total energy recovery reversible heat pump technology, the unit meets practically every chilled water, hot water and domestic hot water system requirement automatically and with high energy efficiency in all load conditions.
- **MODULAR SCROLL TECHNOLOGY** - Designed for outdoor installation, SPINchiller³ MF employs modular Scroll technology with several compressors on the same refrigeration circuit, electronic expansion valves and plate evaporators with highly efficient heat exchange. It stands out for the very high SEER efficiency during the seasonal operation cycle.
- **INDUSTRIALISED SYSTEM** - Packaged unit can reduce the initial system costs even by 40% compared to a traditional solution with separated production, for example using chillers or boilers. Most of the routine system activities are in fact realized by Clivet inside the unit: selection and sizing of components; mechanical and hydraulic connections; electrical and adjustment wiring; functional testing.



functions and features



dimensions and clearances



Size - WSAN-XSC3 MF	90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4	260.8	280.8	300.8	320.8	340.8	360.8	400.8	440.8	480.8
A - Length	mm	4149	4149	4149	4149	5518	5518	6400	6400	6400	6400	9614	10940	10940	10940	11818	12822	12822	12822
B - Width	mm	2243	2243	2243	2243	2243	2243	2243	2243	2243	2246	2246	2246	2246	2246	2246	2246	2246	2246
C - Height	mm	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668
A1	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
A2	mm	700	700	700	700	700	700	700	700	700	1500	1500	1500	1500	1500	1500	1500	1500	1500
B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
B2	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Operating weight	kg	3119	3185	3259	3362	3932	4006	4769	4830	5068	5234	7984	8640	8714	8788	9941	10820	10941	11750

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

VERSION:

► **EXC** Excellence (Standard)

CONFIGURATION:

► **4T** Configuration for 4-pipe system (Standard)
 ► **2T** Configuration for 2-pipe system

ENERGY RECOVERY:

► **R** Total energy recovery (Standard)

ACOUSTIC CONFIGURATION:

► **SC** Acoustic configuration with compressor soundproofing (Standard)
 ► **EN** Extremely low noise acoustic configuration

TYPE FAN EXTERNAL SECTION:

► **AXIX** High efficiency diffuser for axial fan - AxiTop (Standard)
 ► **NAXI** High efficiency diffuser for axial fan - AxiTop: not required

technical data

Size – WSAN-XSC3 MF			90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4	260.8	280.8	300.8	320.8	340.8	360.8	400.8	440.8	480.8
COOLING 0% - HEATING 100%																					
Heating capacity	(1)	kW	295	326	355	395	445	492	567	627	675	728	839	890	937	984	1059	1134	1254	1350	1456
Total power input	(1)	kW	81,9	89,5	97,0	106	121	133	156	171	187	200	227	241	253	266	289	311	342	374	400
COP at full load	(1)	-	3,60	3,64	3,66	3,72	3,69	3,70	3,64	3,67	3,61	3,64	3,70	3,69	3,70	3,70	3,67	3,64	3,67	3,61	3,64
COOLING 100% - HEATING 0%																					
Cooling capacity	(2)	kW	259	275	298	340	385	434	503	545	602	650	725	770	819	868	937	1006	1090	1204	1300
Total power input	(2)	kW	87,9	95,2	104	118	135	150	173	188	204	224	254	271	285	300	323	347	375	409	449
EER at full load	(2)	-	2,95	2,89	2,86	2,88	2,84	2,90	2,90	2,91	2,95	2,90	2,86	2,84	2,87	2,90	2,90	2,90	2,91	2,94	2,90
SEER	(6)	-	4,16	4,14	4,13	4,16	4,16	4,13	4,24	4,24	4,22	4,16	4,18	4,23	4,22	4,21	4,23	4,24	4,24	4,22	4,16
COOLING 100% - HEATING 100%																					
Cooling capacity	(3)	kW	255	275	305	344	397	442	509	556	612	670	741	794	839	883	951	1018	1112	1224	1339
Heating capacity	(3)	kW	331	357	396	447	513	573	658	720	794	866	961	1027	1087	1147	1232	1316	1440	1588	1732
Total power input	(3)	kW	76,6	82,6	91,2	103	117	132	150	164	183	197	221	234	249	264	282	299	329	365	394
Overall efficiency	(4)	-	7,65	7,64	7,69	7,66	7,76	7,68	7,80	7,76	7,70	7,79	7,71	7,77	7,72	7,68	7,75	7,81	7,76	7,70	7,79
Compressors soundproofing (SC)2 pipesExcellence																					
Refrigeration circuits	Nr		2										4								
No. of compressors	Nr		4										8								
Type of compressors	-		SCROLL																		
Standard power supply	V		400/3~/50																		
Sound pressure level	(5)	dB(A)	72	72	72	72	72	73	74	74	74	75	73	73	74	74	74	75	75	75	75
Super-silenced (EN)2 pipesExcellence																					
Sound pressure level	(5)	dB(A)	66	66	66	66	66	67	69	69	69	70	67	67	68	68	69	70	70	70	70
Compressors soundproofing (SC)4-pipeExcellence																					
Sound pressure level	(5)	dB(A)	72	72	72	72	73	74	74	74	75	73	73	74	74	74	75	75	75	75	75
Super-silenced (EN)4-pipeExcellence																					
Sound pressure level	(5)	dB(A)	66	66	66	66	66	67	69	69	69	70	67	67	68	68	69	70	70	70	70
Directive ErP (Energy Related Products)																					
SCOP - AVERAGE Climate - W35	(6)	-	4,08	4,10	4,12	3,95	4,16	3,94	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes

- (1) Data referred to the following conditions: internal exchanger water = 40/45 °C. external exchanger air temperature 7 D.B./6°C W.B.
 (2) Data refer to the following conditions: internal water exchanger = 12/7 °C; outdoor air temperature 35°C
 (3) Data refer to the following conditions: internal water exchanger = 12/7 °C; outdoor air temperature 40/45°C
 (4) Overall efficiency = (Heating capacity + Heating capacity) / (Total power input)
 (5) Sound levels refer to units with full load under nominal test conditions. The sound pressure level refers to a distance of 1 meter from the outer surface of the unit operating in open field. Noise levels are determined using the tensiometric method (UNI EN ISO 9614-2); Data refer to the following conditions: internal water exchanger = 12/7 °C; outdoor air temperature 35°C

- (6) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.



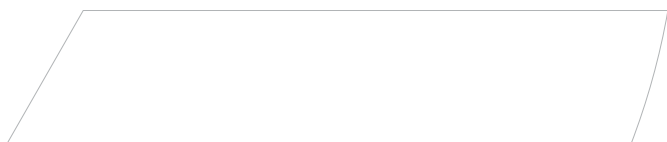
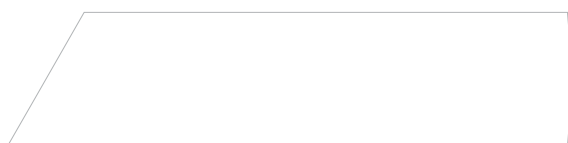
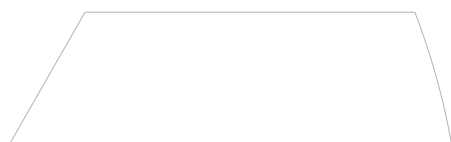
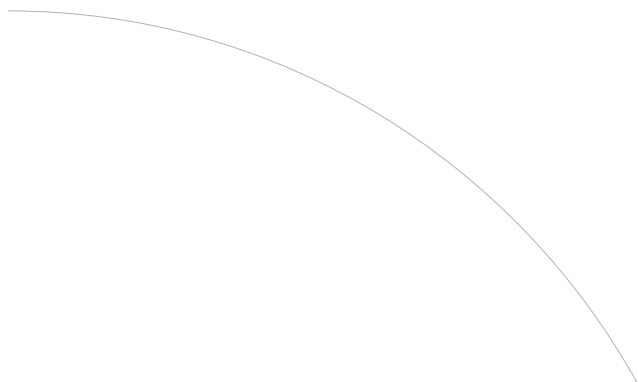
accessories

► CREFB	Device for fan consumption reduction of the external section, ECOBREEZE type	► A1600	1600-litre storage tank
► 2PM	Hydropack load side with 2 pumps (sizes 90.4÷240.4, 360.8÷400.8)	► A1800	1800 l. storage tank
► 3PM	Hydropack load side with 3 pumps (sizes 90.4÷240.4, 360.8÷400.8)	► CCCA	Copper / aluminium condenser coil with acrylic lining
► 2PMV	Hydropack user side with no.2 of inverter pumps (sizes 90.4÷120.4)	► CCCA1	Condenser coil with Aluminium Energy Guard DCC treatment
► 3PMV	Hydropack user side with no.3 of inverter pumps (sizes 90.4÷240.4, 360.8÷400.8)	■ AMMX	Spring antivibration mounts
► 4PM	Hydropack user side with 4 pumps	► PGFC	Finned coil protection grill
► 6PM	Hydropack user side with 6 pumps	► PGCCH	Anti-hail protection grilles
► 6PMV	Hydropack user side with 6 inverter pumps	► CONTA2	Energy meter
► IVFDT	Inverter driven variable flow-rate user side control depending on the temperature differential	► RPRPDI	Refrigerant leak detector with pump down function in the casing
► HYGR2V	Recovery side hydronic unit with 2 inverter pumps	■ RCMRX	Remote control via microprocessor control
► HYGR3V	Hydronic assembly recovery side with no.3 of inverter pumps	■ PSX	Mains power supply
► HYGR6V	Hydronic assembly, recovery side, with 6 inverter pumps	► CMSC10	Serial communication module for LonWorks supervisor
■ IFWX	Steel mesh strainer on the water side	► CMSC9	Serial communication module for Modbus supervisor
■ CSVX	Couple of manually operated shut-off valves	► CMSC11	Serial communication module for BACnet-IP supervisor
► CAU	Storage tank connection user side	► SCP4	Set-point compensation with 0-10 V signal
► CAR	Storage tank connection recovery side	► SPC2	Set-point compensation with outdoor air temperature probe
► A550	550 l. storage tank	► ECS	ECOSHARE function for the automatic management of a group of units
► A700	700 l. storage tank	► PFCP	Power factor correction capacitors (cosφ > 0.9)
► A900	900 l. storage tank	► SFSTR	Disposal for inrush current reduction
► A1200	1200-litre storage tank	► MHP	High and low pressure gauges
► A1400	1400-litre storage tank	► SDV	Cutoff valve on compressor supply and return
		► OHE	Limit extension kit in heating up to -10°C (W.B.)
		► PSPS	Set up for single power supply

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.



Water chiller with FREE-COOLING

Air cooled
Outdoor installation
Capacity from 299 to 1114 kW

HYDRONIC

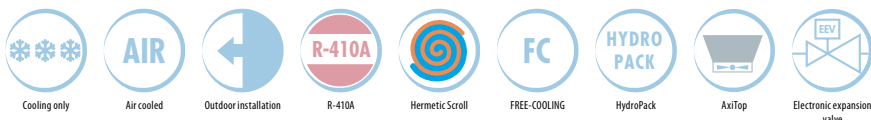


SPINchiller³ FC

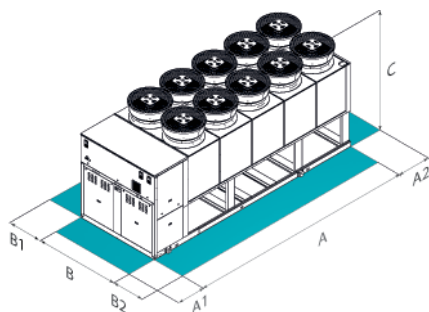
The **SPINchiller³ FREE-COOLING** enables high-level savings on the management costs of the system in applications which also require cooled water during the cold season such as industrial processes, data centres, telecommunications, technological applications and shopping centres.

- **SIGNIFICANT ENERGY SAVINGS** - When the fresh air temperature is lower than the return water temperature of the system, the FREE-COOLING system recovers coolness from the external setting and reduces compressor operations until they are completely stilled. In this way the requested cooling capacity is supplied at no cost.
- **EVEN IN GLYCOL FREE VERSION** - Does not require the addition of an antifreeze substance in the hydraulic circuit used. Therefore, it is particularly suitable for large-sized systems and wherever laws and regulations limit the use of antifreeze substances inside buildings.
- **MODULAR SCROLL TECHNOLOGY** - Designed for outdoor installation, SPINchiller³ employs modular Scroll technology with several compressors on the same refrigeration circuit, electronic expansion valves and plate evaporators with highly efficient heat exchange. It stands out for the very high SEER efficiency during the seasonal operation cycle.
- **INDUSTRIALISED SYSTEM** - The units can be installed easily and quickly thanks to the quick connections towards the user circuit, to the fact that they are already set up for electrical connections and thanks to the full operating test before shipping. They can also be provided with pumping units already installed, thereby integrating all the main components of the system in a single solution.

functions and features



dimensions and clearances



Size – WSAT-XSC3 FC	90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4	260.6	280.6	300.6	320.6	340.6	360.6
A - Length	mm	4543	4543	4543	4543	5518	5518	5518	6454	6454	6454	8648	8648	10598	10598	10598
B - Width	mm	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243
C - Height	mm	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668
A1	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
A2	mm	700	700	700	700	700	700	700	700	700	700	1500	1500	1500	1500	1500
B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
B2	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Operating weight	kg	3940	3994	4037	4105	4593	4645	4899	5758	5851	5899	7184	7274	8632	8714	8817

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

LOW TEMPERATURE:

- - Low temperature: not required (Standard)
- B Water low temperature

VERSION:

- EXC Excellence (Standard)

ACOUSTIC CONFIGURATION:

- SC Acoustic configuration with compressor soundproofing (Standard)
- EN Extremely low noise acoustic configuration

FREE-COOLING:

- FCD Direct FREE-COOLING (Standard)
- FCI No-glycol FREE-COOLING

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

- CREFP Device for fan consumption reduction of the external section at variable speed (phase-cutting) (standard in the SC acoustic config.)
- CREFB Device for fan consumption reduction of the external section, ECOBREEZE type (standard in the EN acoustic config.)

TYPE FAN EXTERNAL SECTION:

- AXIX High efficiency diffuser for axial fan - AxiTop (Standard)
- NAXI High efficiency diffuser for axial fan - AxiTop: not required

technical data

Size – WSAT-XSC3 FC				90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4	260.6	280.6	300.6	320.6	340.6	360.6
FREE-COOLING OFF																			
SC-EXC	Cooling capacity	(1)	kW	299	325	361	397	452	509	566	632	664	718	799	845	955	1008	1059	1114
SC-EXC	Total power input	(1)	kW	79,5	86,8	96,6	110	123	139	164	174	193	214	235	255	265	286	308	330
SC-EXC	EER at full load	(1)	-	3,76	3,75	3,74	3,62	3,68	3,65	3,46	3,64	3,45	3,36	3,40	3,31	3,61	3,53	3,44	3,38
SC-EXC	SEER	(4)	-	4,64	4,65	4,62	4,56	4,66	4,65	4,59	4,64	4,62	4,56	4,61	4,59	4,60	4,65	4,62	4,56
DIRECT FREE-COOLING ON																			
SC-EXC	Cooling capacity	(2)	kW	278	284	294	304	425	439	448	570	574	582	734	740	885	894	913	939
SC-EXC	Total power input	(2)	kW	9,8	9,9	9,9	10,1	13,0	13,3	13,5	16,5	16,6	16,7	20,2	20,2	26,6	26,6	26,6	26,6
SC-EXC	EER at full load	(2)	-	28,43	28,83	29,85	30,16	32,77	33,08	33,31	34,63	34,62	34,85	36,34	36,63	33,27	33,61	34,32	35,30
SC-EXC	Refrigeration circuits		Nr	2															
SC-EXC	No. of compressors		Nr	4										6					
SC-EXC	Type of compressors		-	SCROLL															
SC-EXC	Standard power supply		V	400/3~/50															
SC-EXC	Sound pressure level	(3)	dB(A)	71	72	72	72	72	73	74	74	74	74	73	73	74	74	74	75

Notes

- (1) Data referred to the following conditions: internal exchanger water = 15/10 °C; glycol 30%; entering external exchanger air temperature 30°C
- (2) Free-Cooling only data (compressors OFF) referred to the following conditions: internal exchanger water temperature = 15 / 10°C; entering external exchanger air temperature = 2°C D.B./1°C W.B.; glycol 30%
- (3) The sound levels refer to standard unit with Axitop (no accessories) at full load, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measures are according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification, which provides for a tolerance of 3 dB(A) on the sound power level, which is the only acoustic data to be considered binding. If unit is set without Axitop, the sound power level presents an increase up to 3 dB(A). Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature 35°C
- (4) Data calculated according to the EN 14825:2016 Regulation

SC-EXC Compressors soundproofing (SC)-Excellence

accessories

- 2PM Hydropack user side with 2 pumps
- 3PM Hydropack user side with 3 pumps
- 4PM Hydropack user side with 4 pumps
- 6PM Hydropack user side with 6 pumps
- 2PMV Hydropack user side with no.2 of inverter pumps
- 3PMV Hydropack user side with no.3 of inverter pumps
- 6PMV Hydropack user side with no.6 of inverter pumps
- IVFDT Inverter driven variable flow-rate user side control depending on the temperature differential
- IFWX Steel mesh strainer on the water side
- CSVX Couple of manually operated shut-off valves
- CCCA Copper / aluminium condenser coil with acrylic lining
- CCCA1 Condenser coil with Aluminium Energy Guard DCC treatment
- AMMX Spring antivibration mounts
- PGFC Finned coil protection grill
- PGCCH Anti-hail protection grilles
- CONTA2 Energy meter
- RPRPDI Refrigerant leak detector with pump down function in the casing
- RCMRX Remote control via microprocessor control
- PSX Mains power supply
- CMSC10 Serial communication module for LonWorks supervisor
- CMSC9 Serial communication module for Modbus supervisor
- CMSC11 Serial communication module for BACnet-IP supervisor
- SCP4 Set-point compensation with 0-10 V signal
- SPC2 Set-point compensation with outdoor air temperature probe
- ECS ECOSHARE function for the automatic management of a group of units
- PFCF Power factor correction capacitors (cosφ > 0.9)
- SFSTR Disposal for inrush current reduction
- MHP High and low pressure gauges
- SDV Cutoff valve on compressor supply and return
- WOGLY Unit supplied without glycol solution (FCI only)
- A550 550 l. storage tank (FCD only)
- A700 700 l. storage tank (FCD only)
- A900 900 l. storage tank (FCD only)
- PSPS Set up for single power supply

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

Water chiller in two sections

Air-cooled condenser

Internal installation

Capacity from 237 to 2050 kW

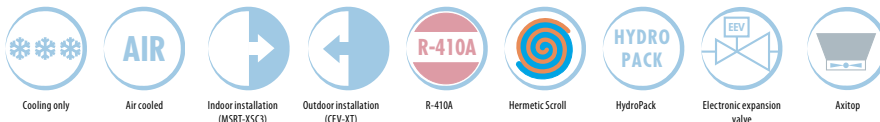
Remotex

Remotex is the new-concept liquid cooler in two sections, which expands the possibilities for application of traditional monobloc products

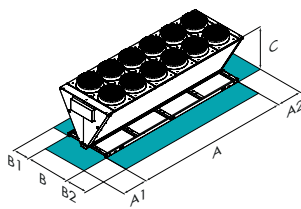
- **MORE PROTECTED AND RELIABLE** - Double refrigeration circuit on all models. All major system components are inside the unit, fully protected from external agents: extended lifespan of the system, high reliability and operation, simplified maintenance. No external water pipes: in cold climates winter draining of the system is no longer necessary to protect it from frost.
- **MORE FLEXIBLE, SPACE SAVING** Each internal section has more combinations with the external section, all standardised and specifically optimised: it consistently offers the best choice for the specific constraints of each project. Any waste: configuring multiple sections, you have only the functionality you need, in the desired quantity. For example, when the hot water requirement is low, only one of the sections can be equipped with heat recovery. Remotex is scalable: further simplification in design and implementation of technical rooms, or in change of use destination.
- **MORE EFFICIENT** - Multiscroll Technology by Clivet: seasonal efficiency for a 30% saving over traditional solutions.



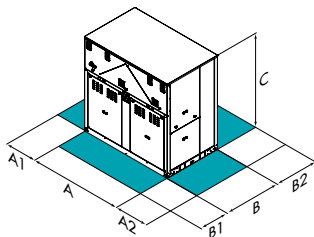
functions and features



dimensions and clearances



CEV-XT
(OUTDOOR SECTION)



MSRT-XSC3
(INDOOR SECTION)

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size – MSRT-XSC3		90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4
A - Length	mm	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350
B - Width	mm	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150
C - Height	mm	2210	2210	2210	2210	2210	2210	2210	2210	2210	2210
A1	mm	700	700	700	700	700	700	700	700	700	700
A2	mm	700	700	700	700	700	700	700	700	700	700
B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
B2	mm	500	500	500	500	500	500	500	500	500	500
Operating weight	kg	1447	1611	1668	1722	1773	1818	2034	2092	2228	2357

Size – CEV-XT		60.0	70.0	75.0	85.0	90.0	95.0	105.0	115.0	120.0	130.0	145.0
A - Length	mm	2750	2750	2750	2750	2750	3700	3700	3700	3700	3700	3700
B - Width	mm	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230
C - Height	mm	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400
A1	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
A2	mm	700	700	700	700	700	700	700	700	700	700	700
B1	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
B2	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Operating weight	kg	564	572	620	644	684	824	836	904	922	938	1018

Size – CEV-XT		150.0	160.0	180.0	190.0	200.0	210.0	230.0	240.0	280.0
A - Length	mm	4700	4700	4700	5670	5670	5670	5670	6650	6650
B - Width	mm	2230	2230	2230	2230	2230	2230	2230	2230	2230
C - Height	mm	2400	2400	2400	2400	2400	2400	2400	2400	2400
A1	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100
A2	mm	700	700	700	700	700	700	700	700	700
B1	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500
B2	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500
Operating weight	kg	1238	1198	1356	1634	1664	1690	1820	1758	1944

The above mentioned data are referred to standard units for the constructive configurations indicated.



Compact control unit

The Remotex internal section contains all functionalities and components necessary for correct operation, already optimised and tested by Clivet for maximum efficiency and reliable results. The Hydropack pumping units are also available inside the section, ready for use.



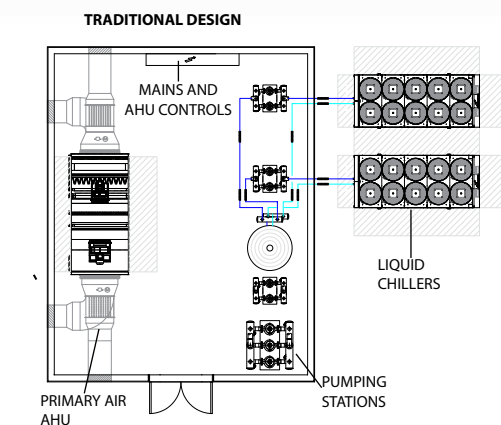
Versatile

Compared to conventional packaged products, Remotex offers unique flexibility of choice. Two versions (EXCELLENCE and PREMIUM), two acoustic configurations (soundproofed and extremely low noise) and many other functions are available: always the best selection according to energy efficiency, quiet operation, external climate, compactness and initial investment.



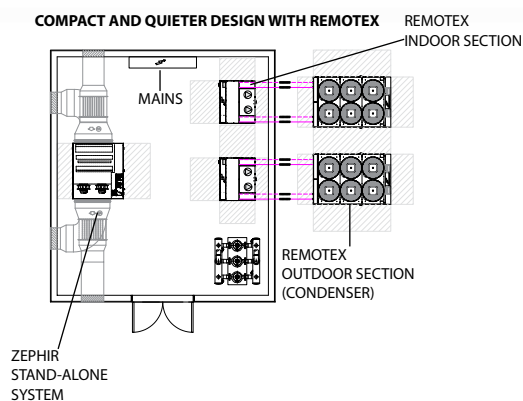
Scalable

The simple addition of further sections adjusts the capacity produced for the actual needs of the building. Always adding less space than traditional solutions. In this way, the investment is also diluted over time.



A unique system

Remotex is perfect in combination with ZEPHIR, the innovative autonomous primary air system for thermodynamic energy recovery: smaller technical rooms, maximum simplification and rapidity of plant construction, even more space and silent operation outside...



STANDARD CONFIGURATION



technical data

Size – MSRT-XSC3			90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4
-	Refrigeration circuits	Nr	2	2	2	2	2	2	2	2	2	2
-	No. of compressors	Nr	4	4	4	4	4	4	4	4	4	4
-	Type of compressors	-	SCROLL									
-	Standard power supply	V	400/3~/50									
EXCELLENCE - SOUNDPROOFING (STANDARD)												
SC-EXC	Cooling capacity	(1) kW	259	278	309	346	399	441	503	561	615	683
SC-EXC	Total power input	(1) kW	80,4	91,2	99,0	110	123	141	161	174	193	210
SC-EXC	EER	(1) -	3,23	3,05	3,13	3,13	3,26	3,12	3,13	3,23	3,19	3,25
SC-EXC	SEER	(3) -	4,73	4,57	4,68	4,68	4,81	4,55	4,62	4,68	4,67	4,73
SC-EXC	Size – CEV-XT		90.0	105.0	115.0	120.0	145.0	160.0	180.0	200.0	210.0	230.0
SC-EXC	No. fans	Nr	4	6	6	6	6	8	8	10	10	10
SC-EXC	Standard airflow	l/s	23553	36583	36143	35507	34218	47084	46331	58684	57754	56458
SC-EXC	Sound pressure level	(2) dB(A)	50	52	52	52	52	53	53	53	53	53
EXCELLENCE - SUPERSILENCED												
EN-EXC	Cooling capacity	(1) kW	261	281	306	352	399	435	505	550	613	681
EN-EXC	Total power input	(1) kW	79,9	87,3	98,2	107	122	141	159	174	192	207
EN-EXC	EER	(1) -	3,27	3,22	3,12	3,28	3,28	3,09	3,18	3,15	3,19	3,29
EN-EXC	SEER	(3) -	4,75	4,80	4,72	4,82	4,81	4,59	4,81	4,79	4,71	4,82
EN-EXC	Size – CEV-XT		115.0	120.0	130.0	150.0	160.0	190.0	200.0	230.0	240.0	280.0
EN-EXC	No. fans	Nr	6	6	6	8	8	10	10	10	12	12
EN-EXC	Standard airflow	l/s	28959	28247	27792	38367	37417	47772	46598	44348	55756	53050
EN-EXC	Sound pressure level	(2) dB(A)	46	46	46	48	48	48	48	48	49	49
PREMIUM - SOUNDPROOFING												
SC-PRM	Cooling capacity	(1) kW	237	258	282	331	367	414	469	507	577	626
SC-PRM	Total power input	(1) kW	89,3	98,1	107	116	137	152	173	183	205	229
SC-PRM	EER	(1) -	2,65	2,63	2,64	2,86	2,68	2,72	2,71	2,77	2,82	2,74
SC-PRM	SEER	(3) -	4,12	4,11	4,10	4,23	4,10	4,12	4,12	4,14	4,22	4,12
SC-PRM	Size – CEV-XT		60.0	70.0	75.0	85.0	105.0	115.0	130.0	145.0	150.0	160.0
SC-PRM	No. fans	Nr	4	4	4	4	6	6	6	6	8	8
SC-PRM	Standard airflow	l/s	24876	24603	24319	23563	36583	36143	34976	34218	46598	47084
SC-PRM	Sound pressure level	(2) dB(A)	50	50	50	50	52	52	52	52	53	53
PREMIUM - SUPERSILENCED												
EN-PRM	Cooling capacity	(1) kW	239	258	283	324	372	403	471	506	566	615
EN-PRM	Total power input	(1) kW	85,0	97,6	107	118	131	150	169	182	207	227
EN-PRM	EER	(1) -	2,82	2,64	2,64	2,74	2,83	2,68	2,79	2,77	2,74	2,71
EN-PRM	SEER	(3) -	4,29	4,13	4,14	4,28	4,22	4,14	4,28	4,34	4,26	4,26
EN-PRM	Size – CEV-XT		85.0	95.0	105.0	115.0	120.0	130.0	150.0	160.0	190.0	200.0
EN-PRM	No. fans	Nr	4	6	6	6	6	6	8	8	10	10
EN-PRM	Standard airflow	l/s	18680	29838	29353	28959	28247	27656	38367	37417	47773	46598
EN-PRM	Sound pressure level	(2) dB(A)	45	46	46	46	46	46	48	48	48	48

Notes

- (1) Data refer to the following conditions: internal water exchanger = 12/7 °C; outdoor air temperature 35°C
- (2) Sound levels refer to the external section, under nominal test conditions. The sound pressure is measured at 10 m from the external surface of the unit in open field conditions.
- (3) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

SC-EXC Compressor soundproofing (SC)-Excellence
 EN-EXC Supersilenced (EN)-Excellence
 SC-PRM Compressor soundproofing (SC)-Premium
 EN-PRM Supersilenced (EN)-Premium

DUAL CONFIGURATION



TRIPLE CONFIGURATION



D140.4	D160.4	D180.4	D200.4	D220.4	D240.4	T180.4	T200.4	T220.4	T240.4
2+2	2+2	2+2	2+2	2+2	2+2	2+2+2	2+2+2	2+2+2	2+2+2
4+4	4+4	4+4	4+4	4+4	4+4	4+4+4	4+4+4	4+4+4	4+4+4
SCROLL 400/3~/50						SCROLL 400/3~/50			
798	882	1006	1122	1230	1366	1509	1683	1845	2049
246	282	322	348	386	420	483	522	579	630
3,26	3,12	3,13	3,23	3,19	3,25	3,13	3,23	3,19	3,25
4,81	4,55	4,62	4,68	4,67	4,73	4,62	4,68	4,67	4,73
D145.0	D160.0	D180.0	D200.0	D210.0	D230.0	T180.0	T200.0	T210.0	T230.0
6+6	8+8	8+8	10+10	10+10	10+10	8+8+8	10+10+10	10+10+10	10+10+10
68437	94168	92662	117368	115509	112916	138993	176052	173263	169373
55	56	56	56	56	56	58	58	58	58
798	870	1010	1100	1226	1362	1515	1650	1839	2043
244	282	318	348	384	414	477	522	576	621
3,28	3,09	3,18	3,15	3,19	3,29	3,18	3,15	3,19	3,29
4,81	4,59	4,81	4,79	4,71	4,82	4,81	4,79	4,71	4,82
D160.0	D190.0	D200.0	D230.0	D240.0	D280.0	T200.0	T230.0	T240.0	T280.0
8+8	10+10	10+10	10+10	12+12	12+12	10+10+10	10+10+10	12+12+12	12+12+12
74833	95544	93197	88696	111511	106100	139795	133043	167267	159150
51	51	51	51	52	52	53	53	54	54
734	828	938	1014	1154	1252	1407	1521	1731	1878
274	304	346	366	410	458	519	549	615	687
2,68	2,72	2,71	2,77	2,82	2,74	2,71	2,77	2,82	2,74
4,10	4,12	4,12	4,14	4,22	4,12	4,12	4,14	4,22	4,12
D105.0	D115.0	D130.0	D145.0	D150.0	D160.0	T130.0	T145.0	T150.0	T160.0
6+6	6+6	6+6	6+6	8+8	8+8	6+6+6	6+6+6	8+8+8	8+8+8
73166	72287	69952	68437	93197	94168	69952	68437	93197	94168
55	55	55	55	56	56	57	57	58	58
744	806	942	1012	1132	1230	1413	1518	1698	1845
262	300	338	364	414	454	507	546	621	681
2,83	2,68	2,79	2,77	2,74	2,71	2,79	2,77	2,74	2,71
4,22	4,14	4,28	4,28	4,34	4,26	4,28	4,34	4,26	4,26
D120.0	D130.0	D150.0	D160.0	D190.0	D200.0	T150.0	T160.0	T190.0	T200.0
6+6	6+6	8+8	8+8	10+10	10+10	8+8+8	8+8+8	10+10+10	10+10+10
56494	55311	76734	74833	95546	93197	76734	74833	95546	93197
49	49	51	51	51	51	53	53	53	53

accessories

- ▶ **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type
- ▶ **2PM** Hydpack user side with 2 pumps
- ▶ **3PM** Hydpack user side with 3 pumps
- ▶ **2PMV** Hydpack user side with no.2 of inverter pumps
- ▶ **3PMV** Hydpack user side with no.3 of inverter pumps
- ▶ **IVFDT** Inverter driven variable flow-rate user side control depending on the temperature differential
- **IFWX** Steel mesh strainer on the water side
- **CSVX** Couple of manually operated shut-off valves
- **AMRX** Rubber antivibration mounts
- ▶ **CONTA2** Energy meter
- ▶ **RPRPDI** Refrigerant leak detector with pump down function in the casing
- **RCMRX** Remote control via microprocessor control
- **PSX** Mains power supply
- ▶ **CMSC10** Serial communication module for LonWorks supervisor
- ▶ **CMSC9** Serial communication module for Modbus supervisor
- ▶ **CMSC11** Serial communication module for BACnet-IP supervisor

Key to symbols:

- Accessories separately supplied

- ▶ **SCP4** Set-point compensation with 0-10 V signal
- ▶ **SPC2** Set-point compensation with outdoor air temperature probe
- ▶ **ECS** ECOSHARE function for the automatic management of a group of units
- ▶ **PFCP** Power factor correction capacitors (cosφ > 0.9)
- ▶ **SFSTR** Disposal for inrush current reduction
- ▶ **RE-20** Electrical panel antifreeze protection for min. outdoor temperature down to -20°C
- ▶ **RE-25** Electrical panel antifreeze protection for min. outdoor temperature down to -25°C
- ▶ **RE-30** Electrical panel antifreeze protection for min. outdoor temperature down to -30°C
- ▶ **RE-35** Electrical panel antifreeze protection for min. outdoor temperature down to -35°C
- ▶ **RE-39** Electrical panel antifreeze protection for min. outdoor temperature down to -39°C
- ▶ **MHP** High and low pressure gauges
- ▶ **SDV** Cutoff valve on compressor supply and return
- ▶ **PTCO** Set up for shipping via container

Water chiller

Air cooled

Outdoor installation

Capacity from 484 to 1423 kW

SCREWLine³

The **SCREWLine³** liquid chillers have a screw compressor with R-134a refrigerant on two separate refrigeration circuits.

- **CONTINUOUS CAPACITY CONTROL** - The continuous capacity control allows for a quick adjustment of the system's load and therefore an accurate control of the chilled water temperature with an exceptionally wide operating range.
- **EFFICIENT AND RELIABLE TECHNOLOGY** - SCREWLine³ employs the new generation dual screw compressors, electronic expansion valves, shell and tube evaporator and fans with innovative AxiTop diffusers with kinetic energy recovery.
- **FOR ALL CIVIL AND INDUSTRIAL APPLICATIONS** - SCREWLine³ is the ideal solution for all civil and industrial applications that require high performance levels, operating continuity and lower running and maintenance costs.

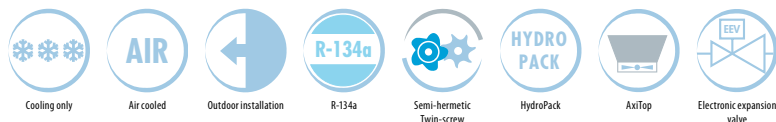


Unit listed on
www.eurovent-certification.com

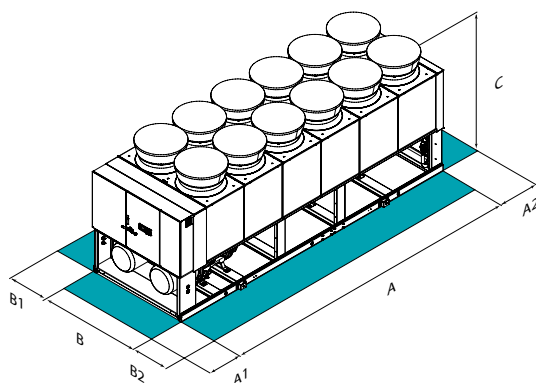


ErP compliant

functions and features



dimensions and clearances



Size – WDAT-SL3		200.2	210.2	220.2	240.2	260.2	280.2	320.2	340.2	360.2	400.2	440.2	500.2	540.2	580.2
ST-EXC	A - Length	mm	4788	4788	5758	5758	5758	6738	6738	7714	7714	8691	8691	10640	10640
ST-EXC	B - Width	mm	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246
ST-EXC	C - Height	mm	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668
ST-EXC	A1	mm	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535
ST-EXC	A2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700
ST-EXC	B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
ST-EXC	B2	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
ST-EXC	Operating weight	kg	4717	4715	5401	5454	5565	6088	6282	7055	7435	8013	8165	8527	9790

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.
ST-EXC Standard (ST)-Excellence

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

LOW TEMPERATURE:

- ▶ - Low temperature: not required (Standard)
- ▶ B Water low temperature

VERSION:

- ▶ EXC Excellence (Standard)

ENERGY RECOVERY:

- ▶ - Energy recovery: not required (Standard)
- ▶ D Partial energy recovery
- ▶ R Total energy recovery

ACOUSTIC CONFIGURATION:

- ▶ ST Standard acoustic configuration (Standard)
- ▶ SC Acoustic configuration with compressor soundproofing
- ▶ EN Extremely low noise acoustic configuration

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

- ▶ CREFP Device for fan consumption reduction of the external section at variable speed (phase-cutting) (Standard)
- ▶ CREFB Device for fan consumption reduction of the external section, ECOBREEZE type
- ▶ CREFO Device for fan consumption reduction of the external section, on/off type

TYPE FAN EXTERNAL SECTION:

- ▶ AXIX High efficiency diffuser for axial fan - AxiTop (Standard)
- ▶ NAXI High efficiency diffuser for axial fan - AxiTop: not required

technical data

Size – WDAT-SL3				200.2	210.2	220.2	240.2	260.2	280.2	320.2	340.2	360.2	400.2	440.2	500.2	540.2	580.2
ST/SC-EXC	▶ Cooling capacity (EN14511:2013)	(1)	kW	484	508	549	583	635	706	780	835	898	977	1096	1213	1315	1423
ST/SC-EXC	Total power input (EN14511:2013)	(1)	kW	156	164	175	186	204	226	247	267	287	313	353	388	424	454
ST/SC-EXC	EER (EN 14511:2013)	(1)	-	3,10	3,10	3,14	3,14	3,11	3,13	3,16	3,13	3,13	3,12	3,10	3,13	3,10	3,13
ST/SC-EXC	SEER	(4)	-	4,10	4,10	4,11	4,11	4,10	4,10	4,11	4,11	4,10	4,18	4,14	4,11	4,11	4,11
ST/SC-EXC	Refrigeration circuits		Nr										2				
ST/SC-EXC	No. of compressors		Nr										2				
ST/SC-EXC	Type of compressors	(2)	-										DSW				
ST/SC-EXC	Standard power supply		V										400/3~/50				
ST-EXC	Sound pressure level	(3)	dB(A)	81	81	81	81	80	80	80	81	82	83	85	86	87	87
SC-EXC	Sound pressure level	(3)	dB(A)	77	77	77	77	77	77	77	78	79	80	82	82	83	83

Notes

- (1) Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: Internal exchanger water = 12/7°C; External exchanger entering air = 35°C
- (2) DSW = twin-screw compressor
- (3) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Entering external exchanger air temperature 35°C
- (4) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

- SC-EXC Compressors insulation (SC)-Excellence
ST-EXC Standard (ST)-Excellence

accessories

- ▶ 2PM Hydropack load side with 2 pumps
- ▶ 3PM Hydropack load side with 3 pumps
- CSVX Couple of manually operated shut-off valves
- ▶ CCCA Copper / aluminium condenser coil with acrylic lining
- ▶ CCCA1 Condenser coil with Aluminium Energy Guard DCC treatment
- ▶ REGBT Device for the condensing coil partialization
- AMMX Spring antivibration mounts
- ▶ PGCC Finned coil protection grilles and compressor compartment
- ▶ PGCCCH Anti-hail protection grilles
- ▶ TPS Frame protective treatment
- ▶ CONTA2 Energy meter
- RCMRX Remote control via microprocessor control
- PSX Mains power supply
- ▶ CMSC9 Serial communication module for Modbus supervisor
- ▶ CMSC10 Serial communication module for LonWorks supervisor
- ▶ CMSC11 Serial communication module for BACnet-IP supervisor
- ▶ SCP4 Set-point compensation with 0-10 V signal
- ▶ SPC2 Set-point compensation with outdoor air temperature probe
- ▶ SPC1 Set point compensation with 4-20 mA signal
- ▶ ECS ECOSHARE function for the automatic management of a group of units
- ▶ PFCP Power factor correction capacitors (cosfi > 0.9)
- ▶ SFSTR2 Progressive compressor start-up device
- ▶ CBS Overload circuit breakers

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

Water chiller

Air cooled

Outdoor installation

Capacity from 556 to 1330 kW

SCREWLine³-i



The SCREWLine³-i liquid chillers are equipped with variable-speed screw compressors driven by an INVERTER and filled with R-134a refrigerant.

► **TWO INDEPENDENT INVERTER CIRCUITS** - Both refrigeration circuits adopt compact screw compressors with integrated inverter, for maximum reliability and durability. The WDAT-il3 series features top-ranking seasonal efficiency within its category, while guaranteeing considerable energy saving compared to both fixed-speed screw compressors and most inverter-driven screw compressors. In addition, it is extremely silent at low loads.

► **EFFICIENT AND RELIABLE TECHNOLOGY** - SCREWLine³-i comes with electronic expansion valves, shell and tube evaporator and high-efficiency axial fans inclusive of innovative AxiTop diffusers with kinetic energy recovery.



Unit listed on
www.eurovent-certification.com



ErP compliant

functions and features



Cooling only



Air cooled



Outdoor installation



R-134a



Semi-hermetic
Twin-screw



HydroPack



AxiTop

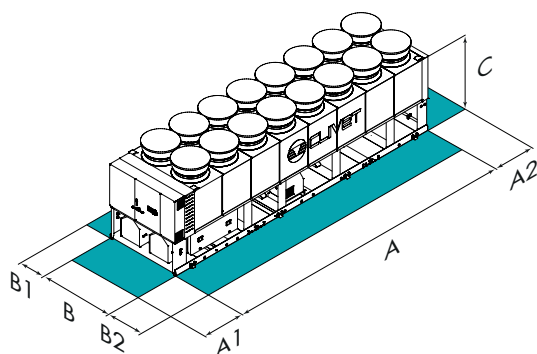


Electronic expansion
valve



Screw Inverter

dimensions and clearances



Size – WDAT-il3		250.2	280.2	320.2	360.2	400.2	420.2	440.2	480.2	540.2*	580.2*
SC-PRM A - Length	mm	4788	5760	6738	7714	8691	8691	8691	10638	10638	10638
SC-PRM B - Width	mm	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246
SC-PRM C - Height	mm	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668
SC-PRM A1	mm	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535
SC-PRM A2	mm	700	700	700	700	700	700	700	700	700	700
SC-PRM B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-PRM B2	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-PRM Operating weight	kg	5057	5658	6338	7303	7738	8585	8975	9915	9935	9935

The above mentioned data are referred to standard units for the constructive configurations indicated.

SC-PRM Compressors insulation (SC)-Premium

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

* PRELIMINARY DATA

versions and configurations

LOW TEMPERATURE:

- - Low temperature: not required (Standard)
- **B** Water low temperature

VERSION:

- **PRM** Premium

► ENERGY RECOVERY:

- - Energy recovery: not required (Standard)
- **D** Partial energy recovery

ACOUSTIC CONFIGURATION:

- **SC** Acoustic configuration with compressor soundproofing (Standard)

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

- **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type (Standard)
- **CREFP** Device for fan consumption reduction of the external section at variable speed (phase-cutting)

TYPE FAN EXTERNAL SECTION:

- **AXIX** High efficiency diffuser for axial fan - AxiTop (Standard)
- **NAXI** High efficiency diffuser for axial fan - AxiTop: not required

technical data

Size – WDAT-il3			250.2	280.2	320.2	360.2	400.2	420.2	440.2	480.2	540.2*	580.2*
SC-PRM	► Cooling capacity (EN14511:2013)	(1) kW	556	616	713	802	902	960	1036	1117	1212	1330
SC-PRM	Total power input (EN14511:2013)	(1) kW	199	225	251	282	312	332	358	399	433	469
SC-PRM	EER (EN14511:2013)	(1) -	2,80	2,74	2,84	2,84	2,90	2,90	2,89	2,80	2,80	2,83
SC-PRM	SEER	(4) -	4,63	4,57	4,59	4,61	4,68	4,62	4,65	4,59	4,61	4,64
SC-PRM	Refrigeration circuits	Nr	2									
SC-PRM	No. of compressors	Nr	2									
SC-PRM	Type of compressors	(2) -	ISW									
SC-PRM	Standard power supply	V	400/3/50									
SC-PRM	Sound pressure level	(3) dB(A)	80	80	80	81	81	82	82	83	83	83

Notes

- (1) Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: Internal exchanger water = 12/7°C; External exchanger entering air = 35°C
- (2) ISW = screw compressor with integrated inverter
- (3) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Entering external exchanger air temperature 35°C
- (4) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

SC-PRM Compressors insulation (SC)-Premium

* PRELIMINARY DATA

accessories

- **2PM** Hydropack user side with 2 pumps
- **3PM** Hydropack user side with 3 pumps
- **2PMV** Hydropack user side with no.2 of inverter pumps
- **3PMV** Hydropack user side with no.3 of inverter pumps
- **IVFDT** Inverter driven variable flow-rate user side control depending on the temperature differential
- **IFWX** Steel mesh strainer on the water side
- **CSVX** Couple of manually operated shut-off valves
- **CCCA** Copper / aluminium condenser coil with acrylic lining
- **CCCA1** Condenser coil with Aluminium Energy Guard DCC treatment
- **REGBT** Device for the condensing coil partialization
- **AMMX** Spring antivibration mounts

- **AMMSX** Spring anti-seismic antivibration mounts
- **PGCC** Finned coil protection grilles and compressor compartment
- **PGCCH** Anti-hail protection grilles
- **TPS** Frame protective treatment
- **CONTA2** Energy meter
- **RCMRX** Remote control via microprocessor control
- **PSX** Mains power supply
- **CMSC9** Serial communication module for Modbus supervisor
- **RPRI** Refrigerant leak detector in the casing
- **SCP4** Set-point compensation with 0-10 V signal
- **SPC2** Set-point compensation with outdoor air temperature probe

Key to symbols and notes

- Accessories separately supplied

Water chiller with FREE-COOLING

Air cooled

Outdoor installation

Capacity from 520 to 1523 kW

SCREWLine³ FC

The **SCREWLine³ FREE-COOLING** enables high-level savings on the management costs of the system in applications which also require cooled water during the cold season such as industrial processes, data centres, telecommunications, technological applications and shopping centres.

- **SIGNIFICANT ENERGY SAVINGS** - When the fresh air temperature is lower than the return water temperature of the system, the FREE-COOLING system recovers coolness from the external setting and reduces compressor operations until they are completely stilled. In this way the requested cooling capacity is supplied at no cost.
- **EVEN IN GLYCOL FREE VERSION** - Does not require the addition of an antifreeze substance in the hydraulic circuit used. Therefore, it is particularly suitable for large-sized systems and wherever laws and regulations limit the use of antifreeze substances inside buildings.
- **CONTINUOUS CAPACITY CONTROL** - The continuous capacity control allows for a quick adjustment of the system's load and therefore an accurate control of the chilled water temperature with an exceptionally wide operating range.
- **EFFICIENT AND RELIABLE TECHNOLOGY** - SCREWLine³ employs the new generation dual screw compressors, electronic expansion valves, shell and tube evaporator and fans with innovative AxiTop diffusers with kinetic energy recovery.

functions and features



Cooling only



Air cooled



Outdoor installation



R-134a



Semi-hermetic Twin-screw



FREE-COOLING



HydroPack

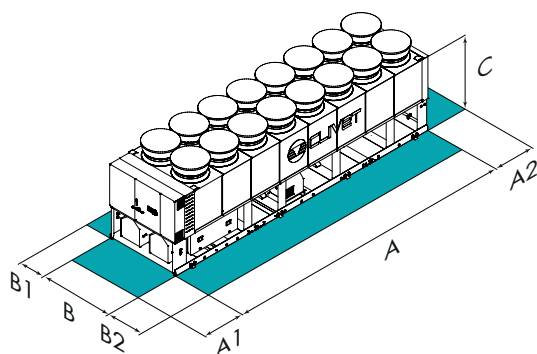


AxiTop



Electronic expansion valve

dimensions and clearances



Size - WDAT-SL3 FC	200.2	210.2	220.2	240.2	260.2	280.2	320.2	340.2	360.2	400.2	440.2	500.2	540.2	580.2
SC-FC-D-EXC A - Length	mm	5316	5316	6468	6468	6468	7265	7265	8241	8241	9217	9217	11166	11166
SC-FC-D-EXC B - Width	mm	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246
SC-FC-D-EXC C - Height	mm	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668
SC-FC-D-EXC A1	mm	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535
SC-FC-D-EXC A2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700
SC-FC-D-EXC B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-FC-D-EXC B2	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-FC-D-EXC Operating weight	kg	6102	6134	7214	7255	7344	8112	8163	9213	9710	11012	11074	12035	12169

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

SC-FC-D-EXC Compressors soundproofing (SC)-Direct FREE-COOLING-Excellence

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

LOW TEMPERATURE:

- - Low temperature: not required (Standard)
- **B** Water low temperature

VERSION:

- **EXC** Excellence (Standard)

ENERGY RECOVERY:

- - Energy recovery: not required (Standard)
- **D** Partial energy recovery

ACOUSTIC CONFIGURATION:

- **SC** Acoustic configuration with compressor soundproofing (Standard)
- **EN** Extremely low noise acoustic configuration (sizes 200.2÷500.2)

FREE-COOLING:

- **FCD** Direct FREE-COOLING (Standard)
- **FCI** No-glycol FREE-COOLING

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

- **CREFP** Device for fan consumption reduction of the external section at variable speed (phase-cutting) (standard in the SC acoustic config.)
- **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type (standard in the EN acoustic config.)

TYPE FAN EXTERNAL SECTION:

- **AXIX** High efficiency diffuser for axial fan - AxiTop (Standard)
- **NAXI** High efficiency diffuser for axial fan - AxiTop: not required

technical data

Size – WDAT-SL3 FC			200.2	210.2	220.2	240.2	260.2	280.2	320.2	340.2	360.2	400.2	440.2	500.2	540.2	580.2
FREE-COOLING OFF																
SC-EXC	Cooling capacity	(1) kW	520	557	579	624	685	746	825	900	961	1049	1164	1311	1409	1523
SC-EXC	Total power input	(1) kW	144	155	163	175	194	211	236	248	270	297	338	369	406	441
SC-EXC	EER at full load	(1) -	3,61	3,59	3,55	3,56	3,53	3,53	3,50	3,62	3,56	3,53	3,44	3,55	3,47	3,45
SC-EXC	SEER	(5) -	4,10	4,10	4,11	4,11	4,10	4,10	4,11	4,11	4,10	4,18	4,14	4,11	4,11	4,11
DIRECT FREE-COOLING ON																
SC-EXC	Cooling capacity	(2) kW	403	411	519	527	536	649	663	684	695	814	835	1066	1080	1093
SC-EXC	Total power input	(2) kW	13,0	13,0	16,0	16,0	16,0	19,0	20,0	22,0	23,0	25,0	26,0	31,0	32,0	32,0
SC-EXC	EER at full load	(2) -	31,1	31,4	32,6	32,8	33,0	33,8	33,8	30,5	30,5	32,0	32,2	34,0	34,1	33,8
SC-EXC	Refrigeration circuits	Nr							2							
SC-EXC	No. of compressors	Nr							2							
SC-EXC	Type of compressors	(3) -							DSW							
SC-EXC	Standard power supply	V							400/3~50							
SC-EXC	Sound pressure level	(4) dB(A)	77	77	77	77	77	77	77	78	79	80	82	82	83	83
EN-EXC	Sound pressure level	(4) dB(A)	73	73	73	73	73	72	73	74	74	76	78	78	-	-

Notes

- (1) Data referred to the following conditions: internal exchanger water = 15/10 °C; glycol 30%; entering external exchanger air temperature 30°C
- (2) Free-Cooling only data (compressors OFF) referred to the following conditions: internal exchanger water temperature = 15 / 10°C; entering external exchanger air temperature = 2°C D.B./1°C W.B.; glycol 30%
- (3) DSW = twin-screw compressor
- (4) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are

- carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Entering external exchanger air temperature 35°C
- (5) Data calculated according to the EN 14825:2016 Regulation

- SC-EXC Compressors soundproofing (SC)-Excellence
EN-EXC Super-silenced (EN)-Excellence

accessories

- **2PM** Hydropack load side with 2 pumps
- **3PM** Hydropack load side with 3 pumps
- **CSVX** Couple of manually operated shut-off valves
- **CCCA** Copper / aluminium condenser coil with acrylic lining
- **CCCA1** Condenser coil with Aluminium Energy Guard DCC treatment
- **AMMX** Spring antivibration mounts
- **PGCC** Finned coil protection grilles and compressor compartment
- **PGCCH** Anti-hail protection grilles
- **CONTA2** Energy meter
- **RCMRX** Remote control via microprocessor control
- **PSX** Mains power supply
- **CMSC9** Serial communication module for Modbus supervisor

- **CMSC10** Serial communication module for LonWorks supervisor
- **CMSC11** Serial communication module for BACnet-IP supervisor
- **SCP4** Set-point compensation with 0-10 V signal
- **SPC2** Set-point compensation with outdoor air temperature probe
- **SPC1** Set point compensation with 4-20 mA signal
- **ECS** ECOSHARE function for the automatic management of a group of units
- **PFCP** Power factor correction capacitors (cosφ > 0.9)
- **SFSTR2** Progressive compressor start-up device
- **CBS** Overload circuit breakers
- **WOGLY** Unit supplied without glycol solution (FCI only)

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

Water chiller

WSA-XIN: cooling only

WSN-XIN: reversible heat pump

Air cooled

Indoor installation

Capacity from 15,5 to 29,1 kW



Unit listed on
www.eurovent-certification.com



ErP compliant

ELFOEnergy Duct Inverter

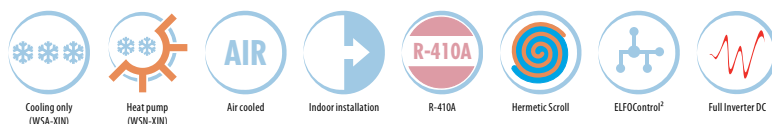
► **SEASONAL EFFICIENCY** - Guaranteed by DC Inverter technology applied to the compressor, which can modulate its speed to the energy needs required. This solution allows a further reduction in consumption and a significant improvement of the seasonal efficiency.

► **ADVANCED TECHNOLOGY** - Each unit is made with the most advanced technology: hydrophilic battery for a guarantee of efficiency in all conditions, electronic expansion valve to optimize the operation of the cooling circuit with DC inverter compressor, water kit to simplify the hydronic circuit and make it easier to maintain. The unit can be equipped with a DC Inverter circulator (optional), providing further energy savings through the modulation of water flow depending on the building thermal load and pressure drop.

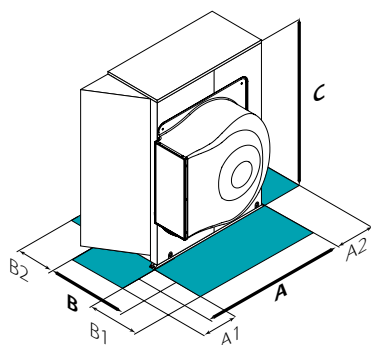
► **COMPACT SIZE** - ELFOEnergy Duct Inverter units are designed for indoor installation and to reduce overall dimensions to a minimum, a decisive factor to adapt to the features of any building.

► **DUCTABLE SUPPLY AND RETURN** thanks to a Plug-fan EC fan, with an available pressure of 100 Pa. The unit is also supplied with a flange to connect the return channel, thereby reducing installation times.

functions and features



dimensions and clearances



Size – WSA-XIN		81	91	101	121	131
A - Length	mm	2016	2016	2016	2016	2016
B - Width	mm	1150	1150	1150	1150	1150
C - Height	mm	1137	1137	1137	1517	1517
A1	mm	350	350	350	350	350
A2	mm	500	500	500	500	500
B1	mm	1000	1000	1000	1000	1000
B2	mm	400	1500	400	400	400
Operating weight	kg	246	246	246	309	309

Size – WSN-XIN		81	91	101	121	131	141
A - Length	mm	2016	2016	2016	2016	2016	2016
B - Width	mm	1150	1150	1150	1150	1150	1150
C - Height	mm	1137	1137	1137	1517	1517	1517
A1	mm	350	350	350	350	350	350
A2	mm	500	500	500	500	500	500
B1	mm	1000	1000	1000	1000	1000	1000
B2	mm	400	400	400	400	400	400
Operating weight	kg	261	261	261	319	319	319

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

VOLTAGE:

► **400TN** Supply voltage 400/3/50+N

USER SIDE HYDRONIC ASSEMBLY:

► **HYGU** User side hydronic assembly (Standard)
 ► **-** User side hydronic assembly: not required
 ► **HYHE** High efficiency hydronic assembly user side

technical data

Size – WSA-XIN			81	91	101	121	131	
▶ Cooling capacity (EN14511:2013)	(1)	kW	15,5	17,5	19,6	25,3	27,8	
Total power input (EN14511:2013)	(1)	kW	5,50	6,58	8,12	9,54	11,2	
EER (EN 14511:2013)	(1)	-	2,82	2,65	2,42	2,65	2,48	
SEER	(6)	-	4,54	4,64	4,14	4,06	3,90	
Refrigeration circuits		Nr	1					
No. of compressors		Nr	1					
Type of compressors		-	SCROLL INVERTER DC					
Standard airflow		l/s	2167	2389	2444	3333	3889	
Max external static pressure		Pa	120	120	120	120	120	
Water flow-rate (User Side)	(2)	l/s	0,73	0,82	0,93	1,19	1,32	
Useful pump discharge head	(2)	kPa	70	65	60	55	48	
Standard power supply		V	400/3/50+N					
Sound power in the duct	(5)	dB(A)	82	82	84	87	91	
Sound pressure level	(3)	dB(A)	48	48	51	52	53	
Size – WSN-XIN			81	91	101	121	131	141
▶ Cooling capacity (EN14511:2013)	(1)	kW	15,5	16,8	19,5	24,0	26,6	29,1
Total power input (EN14511:2013)	(1)	kW	5,85	6,38	8,47	10,2	11,9	14,1
EER (EN 14511:2013)	(1)	-	2,65	2,64	2,30	2,35	2,24	2,06
SEER	(6)	-	3,74	3,82	3,59	3,53	3,33	3,13
▶ Heating capacity (EN14511:2013)	(4)	kW	16,2	18,5	20,4	25,8	28,2	31,5
Total power input (EN14511:2013)	(4)	kW	5,37	6,23	7,27	8,85	10,2	12,1
COP (EN 14511:2013)	(4)	-	3,02	2,97	2,81	2,92	2,75	2,59
Refrigeration circuits		Nr	1					
No. of compressors		Nr	1					
Type of compressors		-	SCROLL INVERTER DC					
Standard airflow		l/s	2222	2306	2444	2778	3056	3172
Max external static pressure		Pa	120	120	120	120	120	120
Water flow-rate (User Side)	(2)	l/s	0,73	0,82	0,92	1,14	1,26	1,38
Useful pump discharge head	(2)	kPa	70	67	60	59	51	43
Standard power supply		V	400/3/50+N					
Sound power in the duct	(5)	dB(A)	82	82	84	87	91	92
Sound pressure level	(3)	dB(A)	48	48	51	52	53	53
Directive ErP (Energy Related Products)								
ErP Energy Class - AVERAGE Climate - W35		-	A+	A+	A+	A+	A+	A+
SCOP - AVERAGE Climate - W35	(6)	-	3,65	3,62	3,55	3,30	3,21	3,22

Notes

- (1) Data compliant to Standard EN 14511:2013 referred to the following conditions: - Internal exchanger water temperature = 12/7°C - Entering external exchanger air temperature = 35°C
- (2) User side entering/leaving water temperature 12/7 °C, external exchanger entering air 35°C
- (3) The sound levels refer to the unit at full load, in the rated test conditions.
The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature 35°C
- (4) Data calculated in compliance with Standard UNI-EN14511:2013 referred to the following conditions: Internal exchanger water temperature = 40/45°C, entering external exchanger air temperature = 7°C D.B. / 6°C W.B.
- (5) Sound power measured in accordance with UNI EN ISO 9614 and Eurovent 8/1 standards for ducted unit with available pressure equal to 120 Pa.
- (6) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the ErP (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

- **GMX** Outlet grille
- **AMRX** Rubber antivibration mounts
- **RCTX** Remote control
- **CMSC2X** Serial communication module with RS485 serial converter kit
- **KG4UPX** Management kit up to 4 units in parallel by the two set point available for each unit
- **KSAX** 100-litre circuit breaker

- **KTFL2X** 1 1/4" water side hose kit

WSN-XIN only:

- **CMACSX** Domestic hot water module
- **ACS500X** 500-litre domestic hot water storage tank
- **ACS55X** 500-litre domestic hot water storage tank with solar coil
- **3DHWX** Three-way valve for domestic hot water

Key to symbols:

- Accessories separately supplied

Water chiller

WSA-XEE: cooling only
WSN-XEE: reversible heat pump
Air cooled
Indoor installation
Capacity from 34 to 99 kW



ELFOEnergy Duct Medium

ELFOEnergy Duct Medium water chillers and heat pumps are indoor units with ducted condensation.

Thanks to his special design ELFOEnergy Duct Medium main features are:

- **Versatility:** different combinations of inlet and outlet plug fans enable to connect easily the unit to the air ducts and to have high available head;
- **High energy efficiency:** ELFOEnergy Duct Medium besides being in Eurovent efficiency class A at full load grants high seasonal power efficiency thanks to the innovative cooling circuit optimized for partial load operation and the DST (Dynamic Supply Temperature) return control logic;
- **Easy installation:** the units are very compact and are supplied on request with high efficiency pumps on board; therefore the available space for other purposes is increased and the installations costs are reduced.



Unit listed on
www.eurovent-certification.com



ErP compliant

functions and features



Cooling only
(WSA-XEE)



Heat pump
(WSN-XEE)



Air cooled



Indoor installation



R-410A



Hermetic Scroll

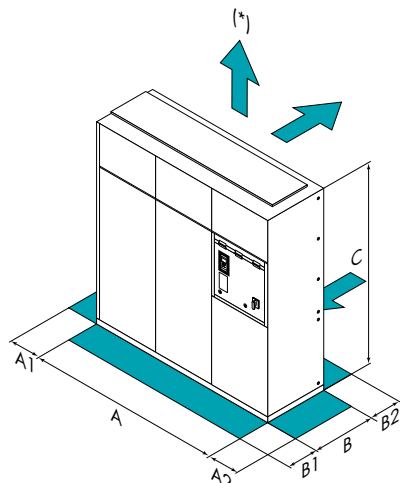


Electronically
commutated
Plug Fan



Electronic expansion
valve

dimensions and clearances



Size – WSA-XEE		182	222	262	302	352
A - Length	mm	1874	1874	2650	2650	2650
B - Width	mm	780	780	780	780	780
C - Height	mm	1996	1996	1996	1996	1996
A1	mm	100	100	100	100	100
A2	mm	500	500	500	500	500
B1	mm	1000	1000	1000	1000	1000
B2	mm	1300	1300	1300	1300	1300
Operating weight	kg	572	578	676	711	810

Size – WSN-XEE		122	162	182	222	262	302	352	402
A - Length	mm	1450	1450	1874	1874	2650	2650	2650	2650
B - Width	mm	780	780	780	780	780	780	780	780
C - Height	mm	1996	1996	1996	1996	1996	1996	1996	1996
A1	mm	100	100	100	100	100	100	100	100
A2	mm	500	500	500	500	500	500	500	500
B1	mm	1000	1000	1000	1000	1000	1000	1000	1000
B2	mm	1300	1300	1300	1300	1300	1300	1300	1300
Operating weight	kg	501	555	620	626	732	770	874	904

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

(*) Optional

versions and configurations

LOW TEMPERATURE:

- - Low temperature: not required (Standard)
- B Water low temperature

ENERGY RECOVERY:

- - Energy recovery: not required (Standard)
- D Partial energy recovery

CONFIGURATION:

- EV Vertical air expulsion (Standard)
- EO Horizontal exhaust air

technical data

Size – WSA-XEE			182	222	262	302	352
► Cooling capacity (EN14511:2013)	(1)	kW	49,3	58,3	67,5	78,6	89,8
Total power input (EN14511:2013)	(1)	kW	17,6	21,4	24,7	27,9	32,1
EER (EN 14511:2013)	(1)	-	2,81	2,72	2,74	2,81	2,79
SEER	(7)	-	3,81	3,80	3,82	3,81	3,80
Refrigeration circuits		Nr	1				
No. of compressors		Nr	2				
Type of compressors	(2)	-	SCROLL				
Standard airflow		l/s	5000	5000	6667	7500	7500
Max external static pressure		Pa	450	450	570	450	420
Water flow-rate (User Side)	(5)	l/s	2,36	2,79	3,23	3,75	4,29
Standard power supply		V	400/3~/50				
Sound power in the duct	(6)	dB(A)	80	81	79	82	84
Sound pressure level	(3)	dB(A)	62	62	61	63	66

Size – WSN-XEE			122	162	182	222	262	302	352	402
► Cooling capacity (EN14511:2013)	(1)	kW	33,9	41,0	47,6	54,5	64,5	75,0	86,3	98,9
Total power input (EN14511:2013)	(1)	kW	15,9	17,7	20,5	24,9	27,5	31,5	37,4	41,6
EER (EN 14511:2013)	(1)	-	2,13	2,32	2,32	2,19	2,35	2,38	2,31	2,38
SEER	(7)	-	2,63	3,10	3,17	3,08	3,36	3,31	3,32	3,40
► Heating capacity (EN14511:2013)	(4)	kW	41,0	48,3	59,0	68,0	80,0	92,4	103	112
Total power input (EN14511:2013)	(4)	kW	13,3	15,5	18,7	21,4	25,1	28,7	32,6	36,8
COP (EN 14511:2013)	(4)	-	3,09	3,12	3,16	3,17	3,19	3,22	3,17	3,05
Refrigeration circuits		Nr	1							
No. of compressors		Nr	2							
Type of compressors	(2)	-	SCROLL							
Standard airflow		l/s	4444	4444	5000	5000	6667	7500	7500	7500
Max external static pressure		Pa	510	510	390	390	570	390	390	390
Water flow-rate (User Side)	(5)	l/s	1,62	1,96	2,28	2,61	3,08	3,57	4,12	4,72
Standard power supply		V	400/3~/50							
Sound power in the duct	(6)	dB(A)	84	84	87	87	84	87	87	87
Sound pressure level	(3)	dB(A)	61	61	62	62	63	63	67	68
Directive ErP (Energy Related Products)										
ErP Energy Class - AVERAGE Climate - W35	-		A+	A+	A+	A++	A+	A+	-	-
SCOP - AVERAGE Climate - W35	(7)	-	3,25	3,31	3,51	3,94	3,75	3,36	3,50	3,80

Notes

- (1) Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: Internal exchanger water temperature = 12/7°C; Entering eExternal exchanger air temperature = 35°C
- (2) SCROLL = scroll compressor
- (3) Sound levels refer to standard units (no accessories) at full load. The sound pressure is measured at 1 m from the external surface of the ducted unit operating in an open field. (standard UNI EN ISO 9614-2); Data referred to the following conditions: Internal exchanger water temperature = 12/7°C; Outdoor air temperature 35°C; Static available pressure 120 Pa; Please note that when the unit is installed in conditions different from nominal test conditions (e.g. near walls or obstacles in general), the sound levels may undergo substantial variations.
- (4) Data calculated in compliance with Standard UNI-EN14511:2013 referred to the following conditions: Internal exchanger water temperature = 40/45°C, entering external exchanger air temperature = 7°C D.B. / 6°C W.B.
- (5) Data referred to the following conditions: Internal exchanger water temperature = 12/7°C; Entering eExternal exchanger air temperature = 35°C
- (6) Sound power measured in accordance with UNI EN ISO 9614 and Eurovent 8/1 standards for ducted unit with available pressure equal to 120 Pa.
- (7) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

- 1PUB Low static pressure single pump
- 1PUA High static pressure single pump
- 1PUHE High efficiency single inverter pump for primary circuit.
- IFWX Steel mesh strainer on the water side
- ABU Flush hydraulic connections
- CCCA Copper / aluminium condenser coil with acrylic lining
- AMRX Rubber antivibration mounts
- PGFC Finned coil protection grill
- CMSC9 Serial communication module for Modbus supervisor
- CMSC10 Serial communication module for LonWorks supervisor
- CMSC11 Serial communication module for BACnet-IP supervisor
- PFCC Power factor correction capacitors (cosφ > 0.95)
- SFSTR Disposal for inrush current reduction
- FANQE Electrical panel ventilation
- MHP High and low pressure gauges
- SDV Cutoff valve on compressor supply and return
- SCP4 Set-point compensation with 0-10 V signal
- SPC2 Set-point compensation with outdoor air temperature probe
- CSVX Couple of manually operated shut-off valves
- MF2 Multi-function phase monitor
- CONTA2 Energy meter
- ECS ECOSHARE function for the automatic management of a group of units
- RCMRX Remote control via microprocessor control
- PSX Mains power supply
- STSOL Additional lifting brackets
- WSN-XEE only:**
- OHE Limit extension kit in heating up to -10°C (W.B.)
- VACSUX User side DHW switching valve

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

Water chiller

Air cooled

Indoor installation

Capacity from 115 to 295 kW

SPINchiller² Duct



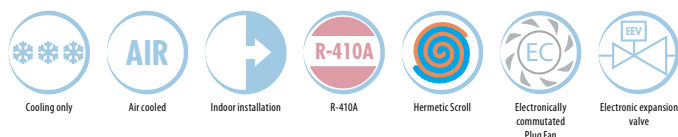
The chillers of **WSA-XSC2** series are indoor units with ducted condensation. They feature uneven Scroll compressors mounted in the same circuit, electronic expansion valves and high efficiency plate type evaporators.

Thanks to his special design **SPINchiller² Duct** main features are:

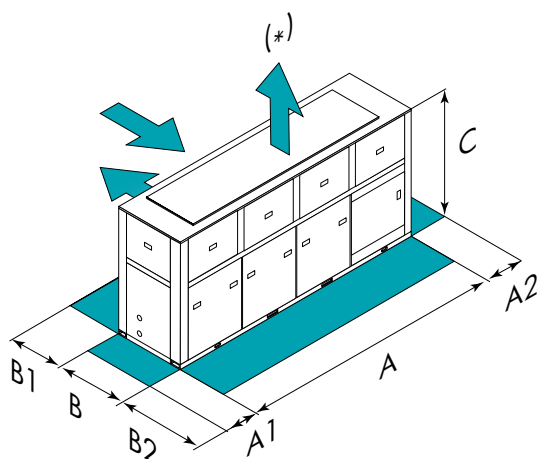
- **Versatility:** different combinations of inlet and outlet plug fans enable to connect easily the unit to the air ducts and to have high available head;
- **High energy efficiency:** SPINchiller² Duct, besides being in Eurovent efficiency class A at full load, grants high seasonal power efficiency thanks to the innovative cooling circuit optimized for partial load operation and the DST (Dynamic Supply Temperature) return control logic;
- **Easy installation:** the units are very compact and are supplied on request with pumps on board; therefore the available space for other purposes is increased and the installations costs are reduced.



functions and features



dimensions and clearances



Size – WSA-XSC2	432	452	552	602	702	80D	90D	100D	110D
A - Length	mm 3312	3312	3312	3312	4400	4400	5486	5486	5486
B - Width	mm 1151	1151	1151	1151	1151	1151	1151	1151	1151
C - Height	mm 2326	2326	2326	2326	2326	2326	2326	2326	2326
A1	mm 900	900	900	900	900	900	900	900	900
A2	mm 900	900	900	900	900	900	900	900	900
B1	mm 1300	1300	1300	1300	1300	1300	1300	1300	1300
B2	mm 1300	1300	1300	1300	1300	1300	1300	1300	1300
Operating weight	kg 1430	1384	1507	1573	1861	1994	2369	2561	2695

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

B1 = Clearance depending on the type of installation.

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

(*) Optional

versions and configurations

LOW TEMPERATURE:

- - Low temperature: not required (Standard)
- B Water low temperature

ENERGY RECOVERY:

- - Energy recovery: not required (Standard)
- D Partial energy recovery
- R Total energy recovery (sizes 702÷110D)

CONFIGURATION:

- EV Vertical air expulsion (Standard)
- EO Horizontal exhaust air

technical data

Size – WSA-XSC2			432	452	552	602	702	80D	90D	100D	110D
► Cooling capacity (EN14511:2013)	(1)	kW	115	123	147	164	184	205	239	268	295
Total power input (EN14511:2013)	(1)	kW	41,8	45,1	54,1	59,9	67,9	75,5	87,9	98,0	108
EER (EN 14511:2013)	(1)	-	2,76	2,73	2,72	2,74	2,71	2,71	2,72	2,73	2,73
SEER	(4)	-	3,83	3,82	3,81	3,80	3,82	3,85	3,86	3,83	3,80
Refrigeration circuits		Nr	1					2			
No. of compressors		Nr	2					4			
Type of compressors	(2)	-	SCROLL								
Standard airflow		l/s	12333	12333	12333	12333	16444	16444	20556	20556	21389
Standard power supply		V	400/3/50								
Sound power in the duct	(3)	dB(A)	92	92	92	92	93	93	95	95	96

Notes

- (1) Data compliant to Standard EN 14511:2013 referred to the following conditions: - Internal exchanger water temperature = 12/7°C - Entering external exchanger air temperature = 35°C
- (2) SCROLL = scroll compressor
- (3) Sound power measured in accordance with UNI EN ISO 9614 and Eurovent 8/1 standards for ducted unit with available pressure equal to 120 Pa.

- (4) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

- 1PUS Standard pump
- 2PM Hydropack load side with 2 pumps
- 3PM Hydropack load side with 3 pumps
- IFWX Steel mesh strainer on the water side
- CSVX Couple of manually operated shut-off valves
- ABU Flush hydraulic connections
- CCCA Copper / aluminium condenser coil with acrylic lining
- CCCA1 Condenser coil with Aluminium Energy Guard DCC treatment
- AMMX Spring antivibration mounts
- PGFC Finned coil protection grill
- MF2 Multi-function phase monitor
- CONTA2 Energy meter
- RCMRX Remote control via microprocessor control
- PSX Mains power supply
- CMSC8 Serial communication module for BACnet supervisor
- CMSC10 Serial communication module for LonWorks supervisor
- CMSC9 Serial communication module for Modbus supervisor
- SCP4 Set-point compensation with 0-10 V signal
- SPC2 Set-point compensation with outdoor air temperature probe
- ECS ECOSHARE function for the automatic management of a group of units
- PFCP Power factor correction capacitors (cosφ > 0.9)
- SFSTR Disposal for inrush current reduction
- FANQE Electrical panel ventilation
- MHP High and low pressure gauges
- SDV Cutoff valve on compressor supply and return

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

Reversible heat pump
Water cooled
Indoor installation
Capacity from 6 to 33 kW

ELFOEnergy Ground



Geothermal energy from the ground or ground water can provide heating and cooling at considerably less expense. **ELFOEnergy Ground** unit is specially designed for use in closed or open circuit geothermal systems, while preserving all the benefits of air-cooled units, such as **efficiency, automatic adaptation, and silent operation**.

- Suitable for systems with terminal units, radiant panels or radiators
- Heating and cooling, using the heat from the ground (geothermal) or water
- Flexible operation: water to water or glycol water to water



functions and features



Heat pump



Water cooled



Indoor installation



R-410A



Hermetic Scroll

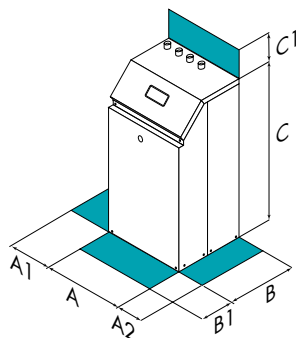


ELFOControl²



Vary Flow

dimensions and clearances



Size – WSHN-EE		17	21	31	41	51	61	71	81	91	101	121
A - Length	mm	402	402	402	402	402	573	573	573	573	573	573
B - Width	mm	602	602	602	602	602	604	604	604	604	604	604
C - Height	mm	785	785	785	785	785	858	858	858	858	858	858
A1	mm	150	150	150	150	150	150	150	150	150	150	150
A2	mm	150	150	150	150	150	150	150	150	150	150	150
B1	mm	600	600	600	600	600	600	600	600	600	600	600
C1	mm	300	300	300	300	300	300	300	300	300	300	300
Operating weight	kg	81	83	86	90	98	115	129	147	163	164	170

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

LOW TEMPERATURE:

- ▶ - Low temperature: not required (Standard)
- ▶ **B** Water low temperature
- ▶ **BS** Water low temperature source side

VOLTAGE:

- ▶ **400TN** Supply voltage 400/3/50+N
- ▶ **230M** Supply voltage 230/1/50 (sizes 17÷51)

HYDRONIC ASSEMBLY SOURCE SIDE:

- ▶ - Hydronic assembly source side: not required (Standard)
- ▶ **HYGS** Hydronic assembly source side (sizes 17÷91)

technical data

Size - WSHN-EE		17	21	31	41	51	61	71	81	91	101	121
Unit for radiant panels												
W10/W35												
▶ Heating capacity	kW	6,95	7,49	9,50	12,0	16,0	19,5	24,7	26,7	30,8	36,2	41,2
Total power input	kW	1,35	1,47	1,83	2,34	3,10	3,83	4,81	5,21	6,04	7,09	8,01
COP (EN 14511:2013)	-	5,15	5,10	5,19	5,11	5,16	5,10	5,13	5,12	5,10	5,11	5,14
W35/W18												
▶ Cooling capacity	kW	8,37	9,05	10,8	14,0	17,8	22,1	27,1	29,8	33,8	38,1	42,8
Total power input	kW	1,51	1,70	2,01	2,49	3,32	4,30	5,28	5,65	6,46	7,46	8,39
EER (EN 14511:2013)	-	5,52	5,32	5,37	5,64	5,35	5,14	5,13	5,27	5,22	5,11	5,10
Terminal units												
W10/W45												
▶ Heating capacity	kW	6,68	7,27	8,83	11,5	15,6	18,9	23,6	25,1	29,3	34,2	38,7
Total power input	kW	1,59	1,73	2,43	3,01	3,96	4,82	5,94	6,62	7,46	8,85	9,76
COP (EN 14511:2013)	-	4,19	4,19	3,63	3,81	3,94	3,92	3,97	3,79	3,93	3,87	3,97
W35/W7												
▶ Cooling capacity	kW	6,23	6,57	8,05	10,8	13,2	16,3	20,7	22,3	25,8	29,5	33,1
Total power input	kW	1,54	1,67	2,04	2,47	3,37	4,21	5,09	5,23	6,25	7,39	8,15
EER (EN 14511:2013)	-	4,04	3,93	3,95	4,39	3,93	3,87	4,07	4,27	4,13	4,00	4,06
SEER	(2)	2,35	2,41	2,69	3,01	3,16	3,17	3,55	3,70	3,69	3,66	3,50
Radiators												
W10/W55												
▶ Heating capacity	kW	6,36	7,07	8,57	10,9	14,8	17,4	22,3	23,6	27,9	31,9	36,7
Total power input	kW	2,06	2,15	3,23	3,82	5,03	6,11	7,47	8,35	9,05	11,0	11,8
COP (EN 14511:2013)	-	3,09	3,29	2,66	2,85	2,94	2,85	2,99	2,83	3,08	2,91	3,11
Water flow-rate (User Side)	(1) l/s	0,29	0,31	0,38	0,51	0,63	0,77	0,96	1,06	1,22	1,39	1,56
Useful pump discharge head	(1) kPa	58	58	56	47	39	62	54	50	44	155	132
Water flow rate (Source Side)	(1) l/s	0,35	0,38	0,46	0,61	0,78	0,95	1,18	1,28	1,50	1,71	1,91
Standard power supply	V	230/1/50					400/3/50+N					
Sound pressure level (1 m)	dB(A)	43	43	44	44	45	46	49	50	51	52	53
Directive ErP (Energy Related Products)												
ErP Energy Class - AVERAGE Climate - W35	-	A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++
ErP Energy Class - AVERAGE Climate - W55	-	A+++	A+++	A++	A++	A+++	A+++	A+++	A++	A+++	A++	A+++
SCOP - AVERAGE Climate - W35	(2)	5,66	5,77	6,01	6,04	5,93	5,92	5,86	5,80	5,45	6,28	6,09
SCOP - AVERAGE Climate - W55	(2)	4,14	4,15	3,79	3,93	4,04	3,94	4,05	3,88	4,12	3,92	4,06

Notes

(1) Data referred to the following conditions: Internal exchanger water = 12/7°C; External exchanger water = 30/35°C

Performances according to EN 14511:2013

W10/W35 water at the user side heat exchanger 30/35°C; inlet water at the source side heat exchanger 10°C

W10/W45 water at the user side heat exchanger 40/45°C; inlet water at the source side heat exchanger 10°C

W10/W55 water at the user side heat exchanger 45/55°C; inlet water at the source side heat exchanger 10°C

W35/W18 water at the user side heat exchanger 23/18°C; inlet water at the source side heat exchanger 30/35°C

W35/W7 water at the user side heat exchanger 12/7°C; inlet water at the source side heat exchanger 30/35°C

(2) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rate heat output ≤70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

accessories

- ▶ **3WV** Three-way valve
- ▶ **IVMSX** Modulating valve source side
- ▶ **IVWX** Water side motorized valve
- ▶ **AMRX** Rubber antivibration mounts
- ▶ **CMMBX** Serial communication module to supervisor (Modbus)
- ▶ **PBLC1X** Service keypad (cable from 1,5 metres)
- ▶ **PMX** Phase monitor
- ▶ **SCP3X** Set point compensation according to the outside enthalpy
- ▶ **SPCX** Set-point compensation with outdoor air temperature probe
- ▶ **SFSTR4N** Disposal for inrush current reduction, for unit 400/3/50+N
- ▶ **KDT3VX** Double temperature control kit, set point compensation with 4-20mA, 3 ways valve control
- ▶ **KDT3V** Double temperature control kit, set point compensation with 4-20mA, 3 ways valve control
- ▶ **3DHWX** Three-way valve for domestic hot water

Key to symbols:

- Accessories separately supplied

- ▶ **SFSTR1** Disposal for inrush current reduction, for unit 230/1/50 (sizes 17÷51)
- **KTFL1X** 1" water side hose kit (sizes 17÷71)
- **KTFL2X** 1 1/4" water side hose kit
- **CACSX** Domestic hot water kit control
- **ACS300X** 300-litre domestic hot water storage tank (sizes 17÷41)
- **ACS500X** 500-litre domestic hot water storage tank (sizes 17÷81)
- **ACS55X** 500-litre domestic hot water storage tank with solar coil (sizes 17÷81)
- **ACS35X** 300-litre domestic hot water storage tank with solar coil (sizes 17÷41)
- **KVMSPIX** Kit for management of radiant panels with connections of 1"(sizes 17÷51)
- **KVMSPIX** Kit for management of radiant panels with connections of 1 1/4"
- **KSAX** 100-litre circuit breaker
- **KVICX** Boiler control kit (sizes 17÷81)
- **KITERAX** Electronic wall-mounting room thermostat

Water chiller

WSH-XEE2: cooling only
WSHN-XEE2: reversible heat pump
Water cooled
Indoor installation
Capacity from 29,2 to 356 kW



ELFOEnergy Ground Medium²

ELFOEnergy Ground Medium² are water cooled water chillers and heat pumps for indoor installation, ideal for multi-family and commercial buildings.

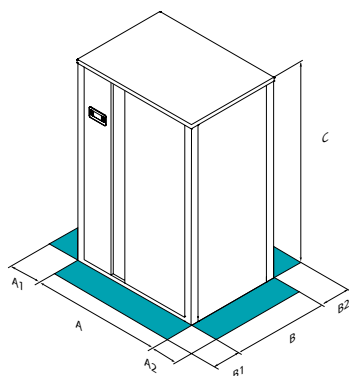
The main features are:

- **HIGH SEASONALEFFICIENCY** - The combination of different size compressors allows to gain more control steps, to provide the energy actually required by the system, to reduce the consumption and to achieve the high seasonal efficiency. The unit reaches the Eurovent Class A heating and cooling for use with underfloor heating.
- **VERSION GROUND WATER OR GEOTHERMAL** - The use of heat exchangers for specific applications with ground water or geothermal closed loop maximize the energy efficiency.
- **PREASSEMBLED UNIT** - All major components are provided on the unit, ensuring maximum reliability and ease of installation.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE** - The compact construction allows to combine multiple units in confined spaces, realizing a high power system. The control allows to coordinate up to 7 units managing automatically the operation with maximum efficiency.

functions and features



dimensions and clearances



Size – WSH-XEE2		10.2	12.2	14.2	16.2	19.2	22.2	27.2	30.2	35.2	40.2	43.2	45.2	50.2	55.2	60.2	70.2	80.2	90.2	110.2	120.2
A - Length	mm	837	837	837	837	837	837	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110
B - Width	mm	607	607	607	607	607	607	885	885	885	885	885	885	885	885	885	1035	1035	1035	1038	1038
C - Height	mm	1483	1483	1483	1483	1483	1483	1910	1910	1910	1910	1910	1910	1910	1910	1910	1910	1910	1910	1910	1910
A1	mm	100	100	100	100	100	100	150	150	150	150	150	150	150	150	150	150	150	150	150	150
A2	mm	100	100	100	100	100	100	150	150	150	150	150	150	150	150	150	150	150	150	150	150
B1	mm	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
B2	mm	300	300	300	300	300	300	350	350	350	350	350	350	350	350	350	350	350	350	350	350
Operating weight	kg	212	212	225	276	295	308	421	424	510	557	622	572	670	700	733	771	809	890	1085	1205

Size – WSHN-XEE2		10.2	12.2	14.2	16.2	19.2	22.2	27.2	30.2	35.2	40.2	43.2	45.2	50.2	55.2	60.2	70.2	80.2	90.2	110.2	120.2
A - Length	mm	837	837	837	837	837	837	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110
B - Width	mm	607	607	607	607	607	607	885	885	885	885	885	885	885	885	885	1035	1035	1035	1038	1038
C - Height	mm	1483	1483	1483	1483	1483	1483	1910	1910	1910	1910	1910	1910	1910	1910	1910	1910	1910	1910	1910	1910
A1	mm	100	100	100	100	100	100	150	150	150	150	150	150	150	150	150	150	150	150	150	150
A2	mm	100	100	100	100	100	100	150	150	150	150	150	150	150	150	150	150	150	150	150	150
B1	mm	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
B2	mm	300	300	300	300	300	300	350	350	350	350	350	350	350	350	350	350	350	350	350	350
Operating weight	kg	223	223	229	290	309	322	441	444	519	580	646	581	698	728	743	808	820	917	1119	1265

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

VERSION:

- **GW** Groundwater version (Standard)
- **GEO** Version for Geothermal application

ENERGY RECOVERY:

- **-** Energy recovery; not required (Standard)
- **D** Partial energy recovery

OPERATION (WSH-XEE2 ONLY):

- **OCO** Cooling-only operation (Standard)
- **OHO** Heating-only operation
- **OHI** Operation with water circuit change-over

technical data

Size – WSH-XEE2			10.2	12.2	14.2	16.2	19.2	22.2	27.2	30.2	35.2	40.2	43.2	45.2	50.2	55.2	60.2	70.2	80.2	90.2	100.2	120.2
► Cooling capacity (EN14511:2013)	(1)	kW	30,8	35,4	42,7	49,6	59,1	68,4	83,8	94,4	109	123	135	147	159	172	197	221	249	280	305	356
Total power input (EN14511:2013)	(1)	kW	6,45	7,63	9,22	10,8	12,5	15,6	17,5	20,4	23,5	26,6	29,8	31,5	34,1	37,7	42,7	48,2	54,7	61,5	68,4	82,4
EER (EN 14511:2013)	(1)	-	4,77	4,64	4,63	4,61	4,72	4,39	4,80	4,63	4,62	4,63	4,53	4,65	4,68	4,58	4,60	4,59	4,55	4,56	4,46	4,32
SEER	(4)	-	5,10	5,15	5,10	5,12	5,11	5,12	5,45	5,54	5,61	5,67	5,19	5,66	5,39	5,25	5,23	5,32	5,13	5,33	5,39	5,39
► Heating capacity (EN14511:2013)	(2)	kW	35,8	41,4	49,6	57,8	68,6	81,0	96,7	109	126	143	157	169	184	200	227	257	290	328	355	420
Total power input (EN14511:2013)	(2)	kW	8,27	9,79	11,6	13,5	15,7	19,2	21,8	25,3	28,9	32,8	36,7	38,7	41,9	46,5	52,4	59,2	66,7	76,6	83,4	101
COP (EN 14511:2013)	(2)	-	4,33	4,23	4,26	4,29	4,37	4,23	4,43	4,32	4,35	4,35	4,27	4,37	4,39	4,30	4,33	4,34	4,28	4,25	4,16	
Refrigeration circuits	Nr		1																			
No. of compressors	Nr		2																			
Type of compressors	-		SCROLL																			
Standard power supply	V		400/3/50																			
Sound pressure level	(3)	dB(A)	44	44	45	49	49	49	49	49	58	58	60	58	60	60	61	63	63	64	64	65
Size – WSHN-XEE2			10.2	12.2	14.2	16.2	19.2	22.2	27.2	30.2	35.2	40.2	43.2	45.2	50.2	55.2	60.2	70.2	80.2	90.2	100.2	120.2
► Cooling capacity (EN14511:2013)	(1)	kW	29,2	34,4	40,7	48,4	57,7	67,6	82,0	91,8	102	120	131	138	155	168	187	217	240	265	292	347
Total power input (EN14511:2013)	(1)	kW	6,40	7,50	9,10	10,6	12,5	15,4	17,5	20,5	23,6	26,8	29,9	31,7	34,2	37,7	42,6	48,2	54,5	61,4	67,8	81,7
EER (EN 14511:2013)	(1)	-	4,57	4,58	4,47	4,56	4,62	4,38	4,68	4,49	4,32	4,47	4,38	4,37	4,52	4,46	4,38	4,50	4,40	4,31	4,31	4,25
SEER	(4)	-	5,29	5,22	4,55	4,59	4,79	4,71	5,14	4,95	5,07	5,15	4,95	5,25	5,16	5,02	4,89	5,08	4,78	4,93	4,96	4,84
► Heating capacity (EN14511:2013)	(2)	kW	34,4	40,4	48,0	56,8	67,0	79,5	93,8	107	119	139	151	163	178	195	218	252	280	314	343	408
Total power input (EN14511:2013)	(2)	kW	8,18	9,65	11,6	13,4	15,7	19,1	21,4	24,7	28,3	32,3	36,0	38,4	41,3	45,7	51,9	58,0	65,5	75,3	82,5	100
COP (EN 14511:2013)	(2)	-	4,20	4,19	4,15	4,25	4,27	4,15	4,38	4,32	4,21	4,30	4,18	4,24	4,32	4,27	4,20	4,34	4,27	4,17	4,16	4,07
Refrigeration circuits	Nr		1																			
No. of compressors	Nr		2																			
Type of compressors	-		SCROLL																			
Standard power supply	V		400/3/50																			
Sound pressure level	(3)	dB(A)	44	44	45	49	49	49	49	49	58	58	60	58	60	60	61	63	63	64	64	65
Directive ErP (Energy Related Products)																						
ErP Energy Class - AVERAGE Climate - W35	-	A+++	A+++	A+++	A+++	-																
ErP Energy Class - AVERAGE Climate - W55	-	A+++	A+++	A+++	A+++	A+++																
SCOP - AVERAGE Climate - W35	(4)	-	5,80	5,69	5,44	5,45	5,47	4,85	5,97	5,82	5,67	5,84	5,64	5,68	5,78	5,68	5,55	5,63	5,45	5,48	5,76	5,61
SCOP - AVERAGE Climate - W55	(4)	-	4,55	4,51	4,41	4,35	4,36	4,40	4,83	4,73	4,60	4,69	4,60	4,67	4,71	4,64	4,61	4,69	4,65	4,59	4,67	4,52

Notes

- (1) Data referred to the following conditions: Internal exchanger water = 12/7°C; External exchanger water = 30/35°C; Performance data calculated in accordance with UNI-EN14511:2013;
- (2) Data referred to the following conditions: Water to internal exchanger 40/45°C; Water temperature to external exchanger 10/7 °C; Performance data calculated in accordance with UNI-EN14511:2013;
- (3) The sound levels refer to the unit at full load, in the rated test conditions. The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Noise levels are determined using the tensiometric method (UNI EN ISO 9614-2); Data referred to the following conditions: Entering / leaving exchanger water temperature user side 12/7°C; Entering / leaving exchanger water temperature source side 30/35°C

- (4) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

- **SDV** Cutoff valve on compressor supply and return (sizes 10.2÷80.2)
- **MOBMA** Larger units
- **MF2** Multi-function phase monitor
- **RCTX** Remote control
- **CMSC10** Serial communication module for LonWorks supervisor
- **CMSC8** Serial communication module for BACnet supervisor
- **CMSC9** Serial communication module for Modbus supervisor
- **CMMBX** Serial communication module to supervisor (Modbus)
- **CMSLWX** Serial communication module for LonWorks
- **BACX** Serial communication module for BACnet supervisor
- **SPCX** Set-point compensation with outdoor air temperature probe
- **IFWX** Steel mesh strainer on the water side
- **SFSTR** Disposal for inrush current reduction (sizes 10.2÷80.2)
- **PFCP** Power factor correction capacitors (cosfi > 0.9)
- **AVIBX** Anti-vibration mount support
- WSH-XEE2 only:**
 - **VS2MC** Cooling side 2-way modulating valve (sizes 10.2÷80.2)
 - **VS2MCX** Cooling side 2-way modulating valve
 - **VS3MC** Cooling side 3-way modulating valve (sizes 10.2÷80.2)
 - **VS3MCX** Cooling side 3-way modulating valve
 - **VARYC** VARYFLOW + (cooling side 2 inverter pumps)
 - **HYGC1** Cooling side hydronic assembly with 1 ON/OFF pump

- **HYGC2** Cooling side hydronic assembly with 2 ON/OFF pumps
- **VS2MH** Heating side 2-way modulating valve (sizes 10.2÷80.2)
- **VS2MHX** Heating side 2-way modulating valve
- **VS3MH** Heating side 3-way modulating valve (sizes 10.2÷80.2)
- **VS3MHX** Heating side 3-way modulating valve
- **VARYH** VARYFLOW + (heating side 2 inverter pumps)
- **HYGH1** Heating side hydronic assembly with 1 ON/OFF pump
- **HYGH2** Heating side hydronic assembly with 2 ON/OFF pumps
- **VACSHX** Heating side DHW switching valve
- WSHN-XEE2 only:**
 - **VACSUX** User side DHW switching valve
 - **VARYU** VARYFLOW + (user side 2 inverter pumps)
 - **HYGU1** User side hydronic assembly with 1 ON/OFF pump
 - **HYGU2** User side hydronic assembly with 2 ON/OFF pumps
 - **VS2M** Source side 2-way modulating valve (sizes 10.2÷80.2)
 - **VS2MX** Source side 2-way modulating valve
 - **VS3M** Source side 3-way modulating valve (sizes 10.2÷80.2)
 - **VS3MX** Source side 3-way modulating valve
 - **VARYS** VARYFLOW + (source side 2 inverter pumps)
 - **HYGS1** Source side hydronic assembly with 1 ON/OFF pump
 - **HYGS2** Source side hydronic assembly with 2 ON/OFF pumps

Key to symbols:

- Accessories separately supplied

Multifunction reversible heat pump

Water cooled

Indoor installation

Capacity from 30 to 345 kW



functions and features



Heat pump



Water cooled



Indoor installation



R-410A

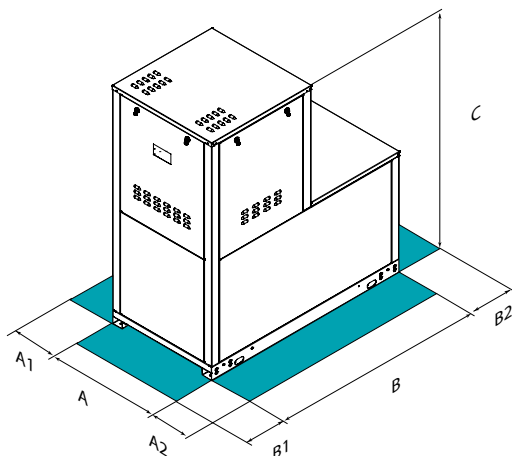


Hermetic Scroll



Vary Flow

dimensions and clearances



CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

ELFOEnergy Ground Medium² MF

The **ELFOEnergy Ground Medium² Multifunction** heat pumps are water-condensed units for indoor installation ideal for multi-family and commercial buildings. **They can generate thermal and cooling energy simultaneously and independently.**

The main features are:

- **HIGH SEASONAL EFFICIENCY** guaranteed by the combination of several control steps, which adapt the capacity supplied to the actual energy demand required by the system, and energy recovery, which recovers up to 100% of the capacity supplied, further increasing efficiency.
- **GROUNDWATER OR GEOTHERMAL WATER VERSION** - Using specific exchangers with groundwater or closed-loop geothermics allows energy efficiency to be maximised.
- **PRE-ASSEMBLED SYSTEM** - All the main components of the system are supplied on the unit, ensuring maximum reliability and ease of installation.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE** - The compact construction allows to combine multiple units in confined spaces, realizing a high power system. The control allows to coordinate up to 7 units managing automatically the operation with maximum efficiency.

Size – WSHN-XEE2 MF	10.2	12.2	14.2	16.2	19.2	22.2	27.2	30.2
A - Length	mm 900	900	900	900	900	900	900	900
B - Width	mm 1700	1700	1700	1700	1700	1700	1700	1700
C - Height	mm 1870	1870	1870	1870	1870	1870	1870	1870
A1	mm 100	100	100	100	100	100	100	100
A2	mm 100	100	100	100	100	100	100	100
B1	mm 700	700	700	700	700	700	700	700
B2	mm 700	700	700	700	700	700	700	700
Operating weight	kg 403	403	400	471	491	497	550	555

Size – WSHN-XEE2 MF	35.2	40.2	43.2	45.2	50.2	55.2	60.2	70.2	80.2	90.2	100.2	120.2
A - Length	mm 1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
B - Width	mm 1700	1700	1700	1700	1700	1700	1700	1700	1700	2200	2200	2200
C - Height	mm 1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
A1	mm 100	100	100	100	100	100	100	100	100	500	500	500
A2	mm 100	100	100	100	100	100	100	100	100	500	500	500
B1	mm 700	700	700	700	700	700	700	700	700	700	700	700
B2	mm 700	700	700	700	700	700	700	700	700	700	700	700
Operating weight	kg 656	721	816	754	901	924	941	1045	1056	1186	1412	1539

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

For further information contact our Technical Department

versions and configurations

VERSION:

- **GW** Groundwater version (Standard)
- **GEO** Version for Geothermal application

ENERGY RECOVERY:

- **R** Total energy recovery (Standard)

CONFIGURATION:

- **4T** Configuration for 4-pipe system (Standard)
- **2T** Configuration for 2-pipe system

technical data

Size – WSHN-XEE2 MF			10.2	12.2	14.2	16.2	19.2	22.2	27.2	30.2
COOLING 0% - HEATING 100%										
Heating capacity	(1)	kW	34,3	40,3	48,0	56,6	66,8	79,2	93,7	106
Total power input	(1)	kW	7,72	9,02	10,7	12,4	14,5	17,4	20,3	23,3
COP at full load	(1)	-	4,44	4,47	4,49	4,56	4,61	4,55	4,62	4,57
COOLING 100% - HEATING 0%										
Cooling capacity	(2)	kW	29,9	34,4	41,4	48,2	57,4	66,5	81,0	91,6
Total power input	(2)	kW	6,25	7,34	8,84	10,3	12,0	14,8	17,2	19,7
EER at full load	(2)	-	4,78	4,69	4,68	4,68	4,78	4,49	4,73	4,65
SEER	(6)	-	5,29	5,22	4,55	4,59	4,79	4,71	5,14	4,95
COOLING 100% - HEATING 100%										
Cooling capacity	(3)	kW	27,2	31,3	37,4	43,9	52,1	61,2	73,8	83,0
Heating capacity	(3)	kW	35,0	40,4	48,3	56,4	66,7	78,8	94,4	107
Total power input	(3)	kW	7,75	9,12	10,9	12,5	14,6	17,6	20,6	23,8
Overall efficiency	(4)	-	8,03	7,86	7,86	8,02	8,14	7,95	8,16	7,98
Refrigeration circuits	Nr		1							
No. of compressors	Nr		2							
Type of compressors	-		SCROLL							
Standard power supply	V		400/3/50							
Sound pressure level	(5)	dB(A)	44	44	45	49	49	49	49	49
Directive ErP (Energy Related Products)										
ErP Energy Class - AVERAGE Climate - W35	-		A+++	A+++	A+++	A+++	-	-	-	-
ErP Energy Class - AVERAGE Climate - W55	-		A+++	A+++	A+++	A+++	A+++	-	-	-
SCOP - AVERAGE Climate - W35	(6)	-	5,80	5,69	5,44	5,45	5,47	4,85	5,97	5,82
SCOP - AVERAGE Climate - W55	(6)	-	4,55	4,51	4,41	4,35	4,36	4,40	4,83	4,73

Size – WSHN-XEE2 MF			35.2	40.2	43.2	45.2	50.2	55.2	60.2	70.2	80.2	90.2	100.2	120.2
COOLING 0% - HEATING 100%														
Heating capacity	(1)	kW	119	139	152	163	179	195	218	252	279	314	343	408
Total power input	(1)	kW	26,8	30,7	34,1	36,3	39,2	43,3	48,9	54,9	61,5	71,1	79,6	96,2
COP at full load	(1)	-	4,46	4,51	4,44	4,48	4,56	4,50	4,45	4,59	4,53	4,42	4,31	4,25
COOLING 100% - HEATING 0%														
Cooling capacity	(2)	kW	105	120	131	142	155	167	190	215	242	271	296	345
Total power input	(2)	kW	22,9	26,0	29,0	30,7	33,3	36,8	41,5	47,0	53,3	60,1	68,1	81,8
EER at full load	(2)	-	4,60	4,61	4,53	4,63	4,64	4,54	4,59	4,56	4,53	4,52	4,34	4,22
SEER	(6)	-	5,07	5,15	4,95	5,25	5,16	5,02	4,89	5,08	4,78	4,93	4,96	4,84
COOLING 100% - HEATING 100%														
Cooling capacity	(3)	kW	95,0	108	118	128	140	151	174	195	219	248	267	314
Heating capacity	(3)	kW	123	139	153	165	179	195	223	251	282	321	347	411
Total power input	(3)	kW	27,3	31,1	34,5	36,7	39,7	43,9	49,1	55,8	63,0	72,1	80,4	96,8
Overall efficiency	(4)	-	7,97	7,95	7,86	7,97	8,03	7,88	8,10	7,99	7,96	7,89	7,63	7,48
Refrigeration circuits	Nr		1											
No. of compressors	Nr		2											
Type of compressors	-		SCROLL											
Standard power supply	V		400/3/50											
Sound pressure level	(5)	dB(A)	58	58	60	58	60	60	61	63	63	64	64	65
Directive ErP (Energy Related Products)														
SCOP - AVERAGE Climate - W35	(6)	-	5,67	5,84	5,64	5,68	5,78	5,68	5,55	5,63	5,45	5,48	5,76	5,61
SCOP - AVERAGE Climate - W55	(6)	-	4,60	4,69	4,60	4,67	4,71	4,64	4,61	4,69	4,65	4,59	4,67	4,52

Notes

- (1) Data referred to the following conditions: Heating water circuit = 45/40°C; Water temperature to external exchanger 10/7 °C
- (2) Data referred to the following conditions: Cooling water circuit = 7/12°C; External exchanger water = 30/35°C
- (3) Data referred to the following conditions: Heating water circuit = 45/40°C; Cooling water circuit = 7/12°C
- (4) Overall efficiency = (Cooling capacity + Heating capacity) / (Total power input)
- (5) Sound levels refer to units with full load under nominal test conditions. The sound pressure is measured at 1 m from the external surface of the unit in open field conditions.
- (6) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the ErP (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rate heat output ≤70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

accessories

- **VARYU** VARYFLOW + (user side 2 inverter pumps)
- **VS2M** Source side 2-way modulating valve
- **VS2MX** Source side 2-way modulating valve
- **VS3M** Source side 3-way modulating valve
- **VS3MX** Source side 3-way modulating valve
- **VARYS** VARYFLOW + (source side 2 inverter pumps)
- **VARYR** VARYFLOW + (recovery side 2 inverter pumps)
- **VACSRX** Total recovery side DHW switching valve
- **SDV** Cutoff valve on compressor supply and return (sizes 10.2÷80.2)
- **MF2** Multi-function phase monitor
- **CMSC10** Serial communication module for LonWorks supervisor
- **CMSC8** Serial communication module for BACnet supervisor
- **CMSC9** Serial communication module for Modbus supervisor
- **SPCX** Set-point compensation with outdoor air temperature probe
- **IFWX** Steel mesh strainer on the water side
- **SFSTR** Disposal for inrush current reduction (sizes 10.2÷80.2)
- **PFCP** Power factor correction capacitors (cosfi > 0.9)
- **AVIBX** Anti-vibration mount support
- **RCTX** Remote control
- **BACX** BACnet serial communication module
- **CMMBX** Serial communication module to supervisor (Modbus)
- **CMSLWX** LonWorks serial communication module

Key to symbols:

- Accessories separately supplied

GROUND Medium INFINITY MODULAR

Modular water / water system

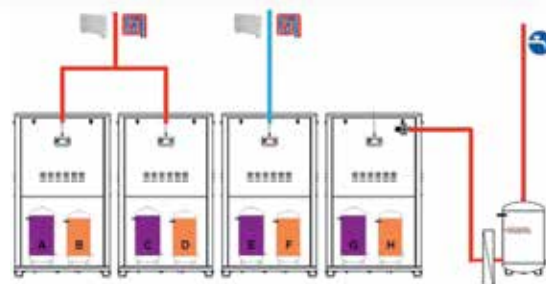
HYDRONIC



- ▶ Hydrothermics and Geothermics
- ▶ Flexible comfort in all conditions
- ▶ Increased seasonal efficiency
- ▶ Ideal for retrofit

Simultaneous cooling and thermal energy production

The modular system *provides better management and distribution of the cooling and thermal capacity supplied*, adapting them to the real requirements of the system.



Capacity modulation

The modular system provides continuous modulation of the capacity adapting it to the real load requested by the system. Continuous modulation achieves a high *seasonal energy efficiency ratio*.

- ▶ Example: Four 300kW modules
Min capacity 120kW – max. 1200kW
3 capacity steps per module
12 system steps (4 modules)
Minimum modulation 10%



Water flow-rate modulation

Each individual module is equipped with the hydronic assembly. The water flow-rate corresponds to the capacity supplied by the active modules with a *sensitive pumping consumption reduction*.

Limited refrigerant content

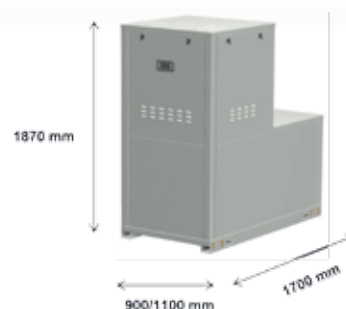
Regulatory trends regarding the reduction of the environmental impact are leading to a limitation in the refrigerant content in the units. The individual system module has a *reduced refrigerant content*.

- ▶ Example: 1200 kW system with four 300 kW modules
Refrigerant charge for each module 35Kg



Ideal solution for retrofitting existing plants

Replacing an old system, for example with a high capacity unit, is extremely easy thanks to the *compact size of each individual module* allowing it to be handled conveniently.



Dimensions referred to multifunction unit

Water chiller

WSH-XSC3: cooling only
WSHN-XSC3: reversible heat pump
Water cooled
Indoor installation
Capacity from 211 to 731 kW

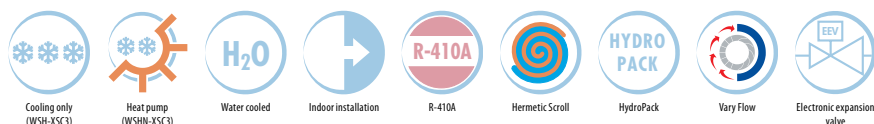
SPINchiller³

The **WSH-XSC3** liquid chiller units and **WSHN-XSC3** water source heat pump units for indoor installation belong to the SPINchiller³ family, and are thus distinguished for their excellent energy efficiency, modularity and reliability, thanks to the high degree of industrialisation distinguishing all products of the family.

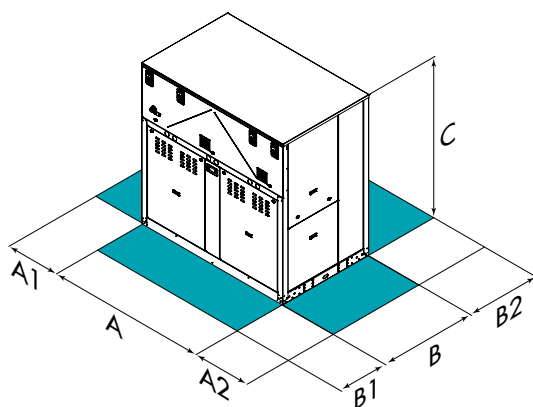
- The **EFFICIENCY** of these products increases as the load decreases, thanks to the modular technology characterising the compressors and cutting-edge heat exchange solutions, yet they guarantee top-ranking performances in their category even with maximum load conditions. The high seasonal efficiency of SPINchiller³ products and their precision in satisfying the requested load guarantee maximum comfort at all times with excellent performance, resulting in considerably lower energy consumption.
- The high seasonal efficiency of **MODULARITY** offers an effective solution for large-size central heating plants. The possibility of controlling in cascade mode SPINchiller³ units having different functions (chiller or heat pump) allows for satisfying demands of up to 5 MW, with guaranteed superior efficiency, reliability and construction quality compared to most solutions available on the market.
- The extensive range of options available with SPINchiller³, including the pumping units mounted on the product – even inverter-driven – make the product suitable for installation in any system.
- The entire series is Eurovent-certified.



functions and features



dimensions and clearances



Size – WSH-XSC3		70.4	75.4	80.4	85.4	90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4
A - Length	mm	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234
B - Width	mm	1132	1132	1132	1132	1132	1132	1132	1460	1460	1460	1460	1460	1460	1460
C - Height	mm	2210	2210	2210	2210	2210	2210	2210	2210	2210	2210	2210	2210	2210	2210
A1	mm	500	500	500	500	500	500	500	500	500	500	500	500	500	500
A2	mm	500	500	500	500	500	500	500	500	500	500	500	500	500	500
B1	mm	800	800	800	800	800	800	800	800	800	800	800	800	800	800
B2	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
EN	Operating weight	kg	1246	1268	1336	1356	1419	1692	1751	1935	2052	2213	2412	2496	2779

Size – WSHN-XSC3		70.4	75.4	80.4	85.4	90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4
A - Length	mm	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234	2234
B - Width	mm	1134	1134	1134	1134	1134	1134	1134	1460	1460	1460	1460	1460	1460	1460
C - Height	mm	2210	2210	2210	2210	2210	2210	2210	2210	2210	2210	2210	2210	2210	2210
A1	mm	500	500	500	500	500	500	500	500	500	500	500	500	500	500
A2	mm	500	500	500	500	500	500	500	500	500	500	500	500	500	500
B1	mm	800	800	800	800	800	800	800	800	800	800	800	800	800	800
B2	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
EN	Operating weight	kg	1242	1264	1322	1343	1406	1583	1651	1924	2013	2121	2291	2411	2668

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.
EN Super-silenced (EN)

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

ACOUSTIC CONFIGURATION:

- **EN** Super-silenced acoustic configuration (Standard)
- **BN** Basic acoustic configuration

ENERGY RECOVERY:

- **-** Energy recovery; not required (Standard)
- **D** Partial energy recovery

LOW TEMPERATURE (WSH-XSC3 ONLY):

- **-** Low temperature: not required (Standard)
- **B** Water low temperature

OPERATION (WSH-XSC3 ONLY):

- **OCO** Cooling-only operation (Standard)
- **OHI** Operation with water circuit change-over
- **OHO** Heating-only operation

technical data

Size – WSH-XSC3			70.4	75.4	80.4	85.4	90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4
► Cooling capacity (EN14511:2013)	(1)	kW	217	231	248	268	292	319	350	395	449	503	568	623	674	731
Total power input (EN14511:2013)	(1)	kW	46,5	50,3	53,2	58,4	61,8	68,1	75,5	83,6	95,7	108	122	133	146	160
EER (EN 14511:2013)	(1)	-	4,67	4,59	4,65	4,59	4,72	4,68	4,64	4,72	4,69	4,67	4,66	4,67	4,60	4,56
SEER	(4)	-	6,16	6,24	6,18	6,06	6,01	5,73	5,65	5,91	6,04	5,88	5,88	5,89	5,89	5,89
► Heating capacity (EN14511:2013)	(2)	kW	249	266	285	309	333	366	401	453	517	578	655	720	780	847
Total power input (EN14511:2013)	(2)	kW	56,8	61,5	64,2	71,5	76,3	83,5	92,6	103	117	131	150	163	180	197
COP (EN 14511:2013)	(2)	-	4,39	4,32	4,44	4,32	4,36	4,38	4,33	4,41	4,42	4,41	4,36	4,41	4,33	4,29
Refrigeration circuits	Nr		2													
No. of compressors	Nr		4													
Type of compressors	-		SCROLL													
Water flow-rate (User Side)		l/s	10,4	11,1	11,9	12,8	14,0	15,3	16,8	18,9	21,5	24,1	27,2	29,9	32,3	35,0
Water flow rate (Source Side)		l/s	12,6	13,4	14,3	15,6	16,9	18,5	20,3	22,8	26,0	29,1	32,9	36,1	39,1	42,5
Standard power supply	V		400/3/50													
EN Sound pressure level		dB(A)	63	64	65	65	65	66	68	68	70	72	71	72	72	73
Size – WSHN-XSC3			70.4	75.4	80.4	85.4	90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4
► Cooling capacity (EN14511:2013)	(1)	kW	211	225	242	261	283	313	341	389	443	496	555	610	666	717
Total power input (EN14511:2013)	(1)	kW	48,5	52,6	55,4	60,9	65,6	70,7	78,1	87,3	99,8	112	127	139	153	168
EER (EN 14511:2013)	(1)	-	4,36	4,28	4,36	4,29	4,32	4,42	4,37	4,46	4,44	4,42	4,36	4,38	4,36	4,27
SEER	(4)	-	5,95	5,89	5,84	5,90	5,92	5,65	5,40	5,92	5,90	5,88	5,89	5,88	5,88	5,89
► Heating capacity (EN14511:2013)	(2)	kW	244	260	279	302	327	358	393	446	508	570	641	704	771	833
Total power input (EN14511:2013)	(2)	kW	59,0	64,0	67,6	74,3	80,3	86,5	94,9	107	121	135	156	170	187	206
COP (EN 14511:2013)	(2)	-	4,13	4,06	4,13	4,06	4,08	4,14	4,15	4,18	4,19	4,20	4,11	4,15	4,13	4,04
Refrigeration circuits	Nr		2													
No. of compressors	Nr		4													
Type of compressors	-		SCROLL													
Water flow-rate (User Side)		l/s	10,1	10,8	11,6	12,5	13,6	15,0	16,4	18,7	21,2	23,8	26,6	29,3	31,9	34,4
Water flow rate (Source Side)		l/s	12,4	13,2	14,2	15,4	16,6	18,3	20,0	22,7	25,9	29,0	32,5	35,7	39,1	42,2
Standard power supply	V		400/3/50													
EN Sound pressure level		dB(A)	63	64	65	65	65	66	68	68	70	72	71	72	72	73
Directive ErP (Energy Related Products)																
SCOP - AVERAGE Climate - W35	(4)	-	6,09	6,09	6,13	6,05	5,89	6,22	6,07	-	-	-	-	-	-	-
SCOP - AVERAGE Climate - W55	(4)	-	4,72	4,67	4,72	4,67	4,41	4,77	4,70	-	-	-	-	-	-	-

Notes

- (1) Data referred to the following conditions: Internal exchanger water = 12/7°C. External exchanger water = 30/35°C. Performance data calculated in accordance with UNI-EN14511:2013
- (2) Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: Internal exchanger water temperature = 40/45°C. Entering external exchanger air temperature = 10/7°C
- (3) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data referred to the following conditions: internal exchanger water = 12/7 °C. entering external exchanger air temperature 35°C.
- (4) Data calculated according to the EN 14825:2016 Regulation

EN Super-silenced (EN)

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.



accessories

- ▶ **AP** Rear water fittings
- ▶ **SDV** Cutoff valve on compressor supply and return
- ▶ **MHP** High and low pressure gauges
- ▶ **MF2** Multi-function phase monitor
- ▶ **SFSTR** Disposal for inrush current reduction (sizes 70.4÷160.4)
- ▶ **RCMRX** Remote control via microprocessor control
- ▶ **ACIE** Antifreeze heater for internal exchanger protection
- ▶ **EHCS** Source side antifreeze electric heaters
- ▶ **CMSC10** Serial communication module for LonWorks supervisor
- ▶ **CMSC9** Serial communication module for Modbus supervisor
- ▶ **CMSC8** Serial communication module for BACnet supervisor
- ▶ **SCP4** Set-point compensation with 0-10 V signal
- ▶ **SPC2** Set-point compensation with outdoor air temperature probe
- ▶ **CSVX** Couple of manually operated shut-off valves
- ▶ **IFWX** Steel mesh strainer on the water side
- ▶ **PFCP** Power factor correction capacitors (cosfi > 0.9)
- ▶ **AVIBX** Anti-vibration mount support
- ▶ **CONTA2** Energy meter
- ▶ **RPRPDI** Refrigerant leak detector with pump down function in the casing
- ▶ **ECS** ECOSHARE function for the automatic management of a group of units
- ▶ **PSX** Mains power supply

WSHN-XSC3 only:

- ▶ **HYGC1** Cooling side hydronic assembly with 1 ON/OFF pump
- ▶ **HYGC2** Cooling side hydronic assembly with 2 ON/OFF pumps
- ▶ **VS2MC** Cooling side 2-way modulating valve
- ▶ **VS2MCX** Cooling side 2-way modulating valve
- ▶ **VS3MCX** Cooling side 3-way modulating valve
- ▶ **VARYC** VARYFLOW + (cooling side 2 inverter pumps)
- ▶ **2PMC** Hydropack cooling side with 2 pumps
- ▶ **V2MCP** Cooling side 2-way modulating valve for high DP

- ▶ **V2MCPX** Cooling side 2-way modulating valve for high DP
- ▶ **HYGH1** Heating side hydronic assembly with 1 ON/OFF pump
- ▶ **HYGH2** Heating side hydronic assembly with 2 ON/OFF pumps
- ▶ **VARYH** VARYFLOW + (heating side 2 inverter pumps)
- ▶ **VS2MH** Heating side 2-way modulating valve
- ▶ **VS2MHX** Heating side 2-way modulating valve
- ▶ **VS3MHX** Heating side 3-way modulating valve
- ▶ **2PMH** Hydropack heating side with 2 pumps
- ▶ **V2MHP** Heating side 2-way modulating valve for high DP
- ▶ **V2MHPX** Heating side 2-way modulating valve for high DP
- ▶ **IVFDT** Inverter driven variable flow-rate cooling side control depending on the temperature differential
- ▶ **IVFDTH** Inverter driven variable flow-rate heating side control depending on the temperature differential

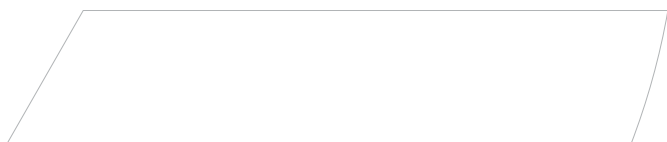
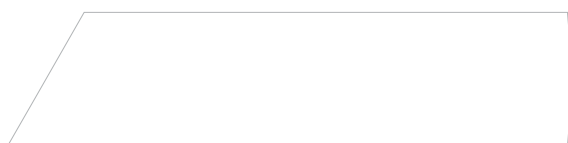
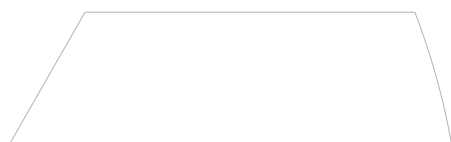
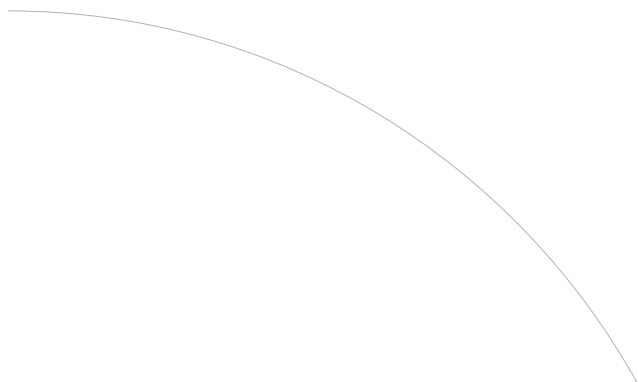
WSHN-XSC3 only:

- ▶ **IVFDT** Inverter driven variable flow-rate user side control depending on the temperature differential
- ▶ **HYGU1** User side hydronic assembly with 1 ON/OFF pump
- ▶ **HYGU2** User side hydronic assembly with 2 ON/OFF pumps
- ▶ **VARYU** VARYFLOW + (user side 2 inverter pumps)
- ▶ **HYP2U** Hydropack user side with 2 pumps
- ▶ **HYGS1** Source side hydronic assembly with 1 ON/OFF pump
- ▶ **HYGS2** Source side hydronic assembly with 2 ON/OFF pumps
- ▶ **VARYS** VARYFLOW + (source side 2 inverter pumps)
- ▶ **VS2M** Source side 2-way modulating valve
- ▶ **VS2MX** Source side 2-way modulating valve
- ▶ **VS3MX** Source side 3-way modulating valve
- ▶ **HYP2S** Hydropack source side with 2 pumps
- ▶ **V2MSP** Source side 2-way modulating valve for high DP
- ▶ **V2MSPX** Source side 2-way modulating valve for high DP
- ▶ **VACSUX** User side DHW switching valve (sizes 180.4÷240.4)

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.



Water chiller

Condenserless

Indoor/outdoor installation

Capacity from 174 to 487 kW

SPINchiller

The **MSE-SC** units belong to the **SPINchiller** family and therefore feature high energy efficiency, self-adaptation and reliability.

They are condenserless units: thanks to indoor installation and remote dispersal of heat into the ambient air, the noise may be transferred to where it causes less disturbance.

- **Compactness:** the width in the units up to 500 kW capacity has been reduced to just 85 cm so that they can pass through normal doorways.
- **Easy connection** to the service system plus a simple control system and easy maintenance drastically reduce work requiring specialised personnel and therefore installation costs.
- **Efficiency** that increases as the heating load decreases, while guaranteeing maximum requested load when necessary.
- The particular abundance of optional accessories allows customisation of the unit, also for special requirements both in the civil and technological air-conditioning sphere. In particular the optional for the HydroPack water circulating unit, consistent with the concept of modularity, has several pumps in parallel (up to 3), to monitor the system load variations better.

The innovative and hi-tech features of SPINchiller give this series a much higher quality than can generally be found on the market today.

functions and features



Cooling only



Remote condenser



Indoor installation



R-407C



Hermetic Scroll

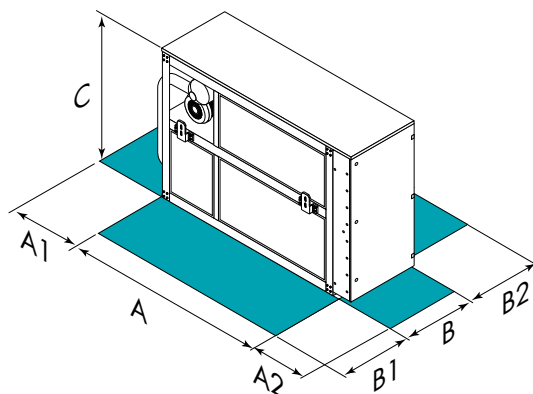


HydroPack



Electronic expansion valve

dimensions and clearances



Size – MSE-SC			65D	70D	75D	75C	80D	90D	90C	100D	110D	120D	135F	150F	165F	180F
ST/EN	A - Length	mm	2541	2541	2541	2670	2541	2541	2670	2541	2541	2541	3051	3051	3051	3051
ST/EN	B - Width	mm	850	850	850	850	850	850	850	850	850	850	850	850	850	850
ST/EN	C - Height	mm	1880	1880	1880	1881	1880	1880	1881	1880	1880	1880	1879	1879	1879	1879
ST/EN	A1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
ST/EN	A2	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
ST/EN	B1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
ST/EN	B2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700	700
ST	Operating weight	kg	1172	1235	1310	1169	1363	1478	1169	1576	1576	1576	2070	2241	2241	2241
EN	Operating weight	kg	1253	1316	1391	1264	1445	1560	1264	1658	1658	1658	2212	2382	2382	2382

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

ST Standard (ST)

EN Extremely low noise(EN)

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

LOW TEMPERATURE:

- - Low temperature: not required (sizes 65D÷75D, 80D÷90D only, Standard)
- **B** Water low temperature (sizes 65D÷75D, 80D÷90D)

ENERGY RECOVERY:

- - Energy recovery: not required (Standard)
- **D** Partial energy recovery

ACOUSTIC CONFIGURATION:

- **ST** Standard acoustic configuration (Standard)
- **EN** Extremely low noise acoustic configuration

UNIT INSTALLATION:

- **II** Indoor installation (Standard)
- **IO** Outdoor installation

DOUBLE SET POINT:

- - Double set point: not required (Standard)
- **DSP** Double set point
- **DSPB** Double set point for water low temperature

technical data

Size – MSE-SC			65D	70D	75D	75C	80D	90D	90C	100D	110D	120D	135F	150F	165F	180F		
ST/EN	▶ Cooling capacity	(1)	kW	174	184	196	205	206	238	248	271	305	332	360	405	447	487	
ST/EN	Compressor power input		kW	54,7	57,6	60,4	60,6	63,3	72,0	75,6	80,7	90,9	101	108	121	136	151	
ST/EN	Total power input	(2)	kW	55,1	58,0	60,8	60,9	63,7	72,4	75,9	81,1	91,4	101	109	122	137	152	
ST/EN	EER		-	3,15	3,17	3,22	3,37	3,23	3,28	3,27	3,34	3,34	3,27	3,32	3,33	3,27	3,21	
ST/EN	Refrigeration circuits		Nr	2			1		2		1		2					
ST/EN	No. of compressors		Nr	4			3		4		3		4		6			
ST/EN	Type of compressors	(3)	-	SCROLL														
ST/EN	Standard power supply		V	400/3/50														
ST	Sound pressure level	(4)	dB(A)	72	73	74	76	75	76	76	76	76	76	78	79	80	80	
EN	Sound pressure level	(4)	dB(A)	67	67	68	70	69	70	71	71	71	70	72	73	74	74	

Notes

The units are shipped with a sealed charge of nitrogen.

(1) Data referred to the following conditions: Internal exchanger water = 12/7°C; Dew Point condensing temperature = 50°C

(2) The Total Power Input value does not take into account the part related to the pumps and required to overcome the pressure drops for the circulation of the solution inside the exchangers

(3) SCROLL = scroll compressor

(4) Data referred to the following conditions: Internal exchanger water = 12/7°C; Dew Point condensing temperature = 50°C; The sound levels refer to the unit at full load, in the rated test conditions.

The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field.

ST Standard (ST)

EN Extremely low noise(EN)

accessories

- **CFSC** Potential-free contacts for compressor status
- **AMRX** Rubber antivibration mounts
- **PM** Phase monitor
- **RCMRX** Remote control via microprocessor control
- **CMSC6** CAN/LON WORKS serial converter kit
- **CMSC4** CAN/Modbus serial converter kit
- **SPC1** Set point compensation with 4-20 mA signal
- **SPC2** Set-point compensation with outdoor air temperature probe
- **SCP3** Set point compensation according to the outside enthalpy
- **PFCP** Power factor correction capacitors (cosφ > 0.9)
- **MSLX** Master-slave operation
- **IFUX** Steel mesh strainer on user side
- **2PM** Hydropack with 2 pumps (sizes 65D÷120D)
- **2P1SB** Hydropack with 2 pumps + 1 in stand-by (sizes 65D÷120D)
- **3PM** Hydropack with 3 pumps
- **EHU** Anti-freeze electric heaters user side for hydronic assembly
- **CEHU** Connection set exchanger with hydronic assembly (user side)
- **MHP** High and low pressure gauges
- **SDV** Cutoff valve on compressor supply and return

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

Water chiller
Condenserless
Indoor installation
Capacity from 300 to 1427 kW

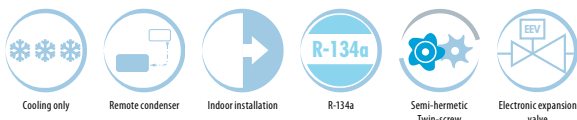
SCREWLine³

The liquid chillers in the **MDE-SL3** range are units for indoor installation and are ideal in combination with the remote condensers in the CEM range. They are particularly suited in civil and industrial sector systems in the following applications:

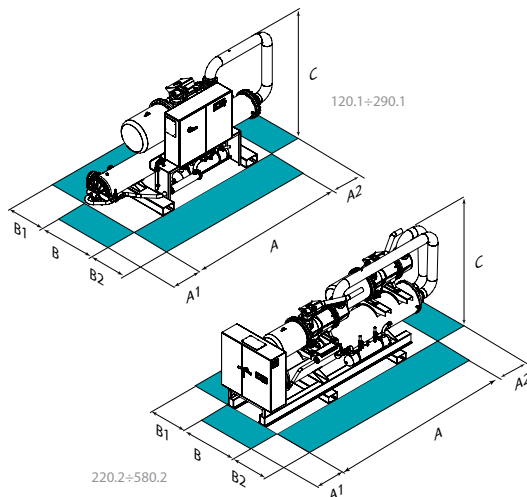
- **BUILDINGS WITH ARCHITECTURAL VALUE** - The chiller is normally installed in a service room and therefore completely concealed from sight, whereas the outdoor exchange section can be positioned remotely.
- **EXTREMELY LOW NOISE EMISSION** - Separated from the chiller, the outdoor exchange section can be selected and sized as required to reduce noise emission.
- **PARTICULARLY SEVERE CLIMATES** - The two section solution makes it possible to avoid having an outdoor water system and therefore having to perform the winter emptying needed to protect it against freezing. With MDE-SL3, the pipes between the two sections contain a refrigerant fluid and not water.

The energy efficiency of the entire range is particularly high: all sizes use two compact two screw semi-hermetic compressors with continuous adjustment of the supplied cooling capacity. The shell and tube evaporators are specifically optimised to operate with ecological R134a refrigerant fluid and are provided with a standard electronic expansion valve.

functions and features



dimensions and clearances



Size – MDE-SL3		120.1	140.1	160.1	180.1	200.1	220.1	250.1	270.1	290.1
A - Length	mm	4210	4210	4210	4189	4189	4189	4189	4324	4324
B - Width	mm	1350	1350	1350	1350	1350	1350	1350	1350	1350
ST-EXC C - Height	mm	1558	1558	1558	1642	1642	1642	1642	1657	1657
EN-EXC C - Height	mm	1573	1573	1573	1750	1750	1750	1750	1750	1750
A1	mm	700	700	700	700	700	700	700	700	700
A2	mm	700	700	700	700	700	700	700	700	700
B1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000
B2	mm	1160	1160	1160	1160	1160	1160	1160	1160	1160
ST-EXC Operating weight	kg	2073	2152	2229	2821	2832	2843	2895	2981	3012
EN-EXC Operating weight	kg	2237	2345	2422	3044	3055	3066	3118	3204	3235

Size – MDE-SL3		220.2	240.2	260.2	280.2	300.2	320.2	340.2	360.2	400.2	440.2	470.2	500.2	540.2	580.2
A - Length	mm	4638	4638	4638	4638	4638	4992	4992	5006	5006	5006	5077	5077	5077	5077
B - Width	mm	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
ST-EXC C - Height	mm	1790	1790	1790	1790	1790	1995	1995	2010	2010	2010	2145	2145	2145	2145
EN-EXC C - Height	mm	1900	1900	1900	1900	1900	2121	2121	2121	2121	2121	2239	2239	2239	2239
A1	mm	1410	1410	1410	1410	1410	1410	1410	1410	1410	1410	1410	1410	1410	1410
A2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700	700
B1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
B2	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
ST-EXC Operating weight	kg	3390	3422	3497	3587	3681	3745	4448	4675	4763	4784	4832	5680	5817	5876
EN-EXC Operating weight	kg	3830	3862	3966	4013	4107	4171	5010	5267	5388	5445	5493	6318	6455	6514

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

ST-EXC Standard (ST)-Excellence
EN-EXC Super-silenced (EN)-Excellence

versions and configurations

LOW TEMPERATURE:

- - Low temperature: not required (Standard)
- B Water low temperature

VERSION:

- EXC Excellence (Standard)

ACOUSTIC CONFIGURATION:

- ST Standard acoustic configuration (Standard)
- EN Extremely low noise acoustic configuration

UNIT INSTALLATION:

- II Indoor installation (Standard)

DOUBLE SET POINT:

- - Double set point: not required (Standard)
- DSP Double set point

technical data

Size – MDE-SL3			120.1	140.1	160.1	180.1	200.1	220.1	250.1	270.1	290.1
ST/EN-EXC	► Cooling capacity	(1) kW	300	364	401	466	508	566	620	683	728
ST/EN-EXC	Compressor power input	(1) kW	69,1	82,4	90,5	105	114	128	140	154	165
ST/EN-EXC	Total power input	(1) kW	69,6	82,9	91,0	105	114	128	140	154	165
ST/EN-EXC	EER	(2) -	4,35	4,42	4,43	4,44	4,46	4,42	4,43	4,44	4,42
ST/EN-EXC	Refrigeration circuits	Nr	1								
ST/EN-EXC	No. of compressors	Nr	1								
ST/EN-EXC	Type of compressors	(3) -	DSW								
ST/EN-EXC	Standard power supply	V	400/3/50								
ST-EXC	Sound pressure level	(4) dB(A)	71	76	76	79	79	80	81	82	82
EN-EXC	Sound pressure level	(4) dB(A)	66	70	71	73	73	74	75	76	76

Size – MDE-SL3			220.2	240.2	260.2	280.2	300.2	320.2	340.2	360.2	400.2	440.2	470.2	500.2	540.2	580.2
ST/EN-EXC	► Cooling capacity	(1) kW	550	585	642	720	757	794	848	899	997	1115	1159	1231	1344	1427
ST/EN-EXC	Compressor power input	(1) kW	128	137	150	164	173	181	195	208	228	255	267	280	307	329
ST/EN-EXC	Total power input	(1) kW	128	138	151	165	174	182	196	209	228	256	268	281	308	329
ST/EN-EXC	EER	(2) -	4,30	4,26	4,27	4,38	4,37	4,39	4,34	4,31	4,38	4,37	4,34	4,39	4,38	4,34
ST/EN-EXC	Refrigeration circuits	Nr	2													
ST/EN-EXC	No. of compressors	Nr	2													
ST/EN-EXC	Type of compressors	(3) -	DSW													
ST/EN-EXC	Standard power supply	V	400/3/50													
ST-EXC	Sound pressure level	(4) dB(A)	74	74	77	79	79	79	80	82	82	84	84	84	85	85
EN-EXC	Sound pressure level	(4) dB(A)	69	69	71	73	73	74	74	76	76	78	79	78	79	79

Notes

The units are shipped with a sealed charge of nitrogen. (sizes 220.2-580.2)

- (1) Data referred to the following conditions: Internal exchanger water = 12/7°C; Condensing temperature = 45°C
- (2) EER referred only to compressors
- (3) DSW = twin-screw compressor
- (4) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Condensing temperature = 45°C

ST-EXC Standard (ST)-Excellence
EN-EXC Extremely low noise(EN)-Excellence

accessories

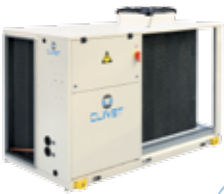
- **AMRX** Rubber antivibration mounts
- **RCMRX** Remote control via microprocessor control
- **PSX** Mains power supply
- **CONTA2** Energy meter
- **CMSC9** Serial communication module for Modbus supervisor
- **CMSC10** Serial communication module for LonWorks supervisor
- **CMSC11** Serial communication module for BACnet-IP supervisor
- **SCP4** Set-point compensation with 0-10 V signal
- **SPC1** Set point compensation with 4-20 mA signal
- **SPC2** Set-point compensation with outdoor air temperature probe
- **ECS** ECOSHARE function for the automatic management of a group of units
- **PFCP** Power factor correction capacitors (cosfi > 0.9)
- **SFSTR2** Progressive compressor start-up device
- **CBS** Overload circuit breakers

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

PACKAGED System

	Medium attendance applications		
			
	SMARTPack ²	CLIVETPack ²	
Air flow	1110 ÷ 2500 l/s (20 ÷ 46 kW)	2500 ÷ 6400 l/s (50 ÷ 160 kW)	7200 ÷ 16700 l/s (155 ÷ 376 kW)
ErP compliance (heat pumps only)			
Products	 	 	 
 Air source Cooling only			CSRT-XHE2 49.4-110.4
 Air source Heat pumps	CKN-XHE2i 7.1-14.2	CSRN-XHE2 15.2 - 44.4 HSE	CSRN-XHE2 49.4-110.4
 Water source Heat pumps		CRH-XHE2 14.2-44.4	CRH-XHE2 49.4-110.4
 Electronically controlled ventilation and variable air flow			
 Free cooling			
 Thermodynamic energy recovery			
 THOR (Thermodynamic Overboost Recovery)			
 Electronic filtration			



Scroll Compressor, Refrigerant R-410A



Tandem Scroll Compressors, Refrigerant R-410A



Full Inverter DC

High attendance applications

Full fresh air applications



CLIVETPack²

1250 ÷ 5000 l/s
(47 ÷ 174 kW)

CLIVETPack² FFA

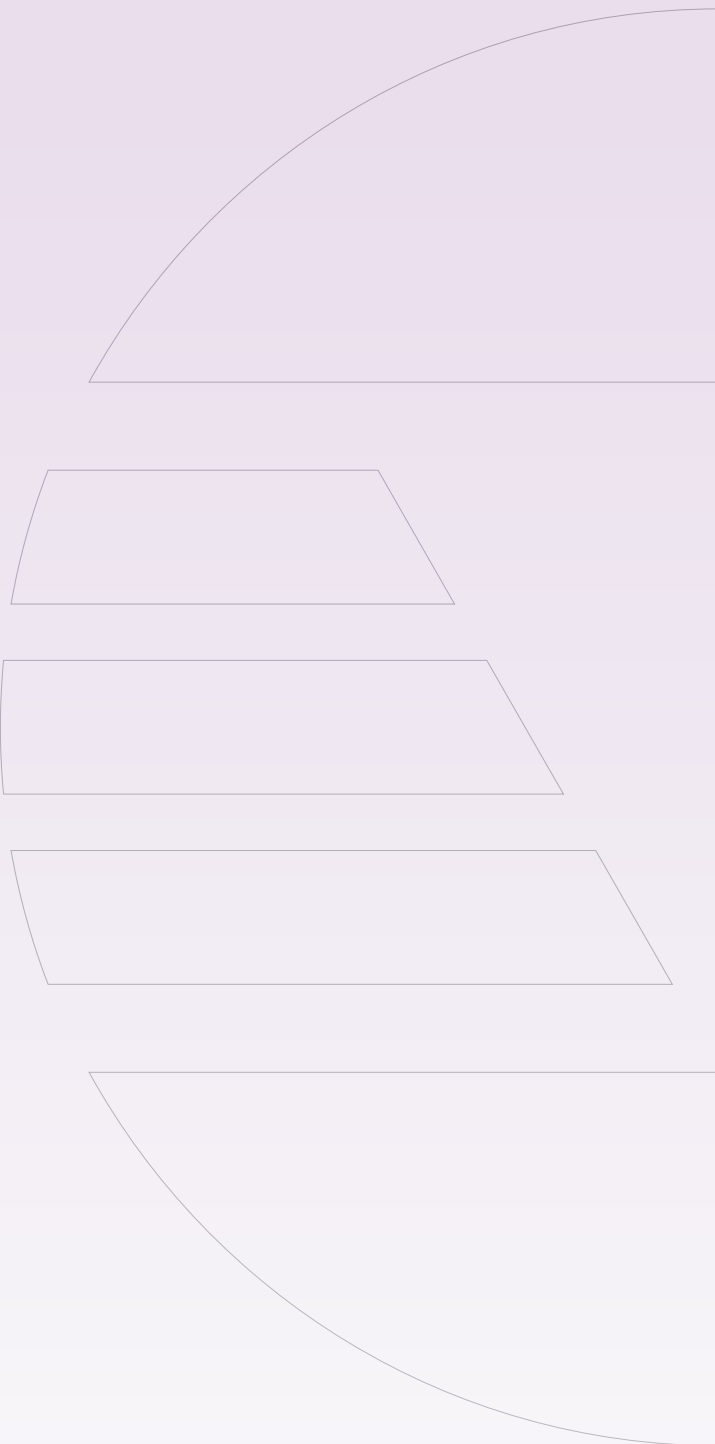
944 ÷ 2200 l/s
(33 ÷ 90 kW)



CSNX-XHE2

CSRN-XHE2 FFA





PACKAGED System

System components

series	size from	to	name	page
Autonomous air-conditioners / Heat pumps - air source - roof top for medium attendance applications				
CKN-XHE2i	7.1	14.2	SMARTPACK2 New	96
CSRN-XHE2	15.2	44.4	CLIVETPack ² HSE	98
CSRT-XHE2 / CSRN-XHE2	49.4	110.4	CLIVETPack ²	102
Autonomous air-conditioners / Heat pumps - air source - roof top for high attendance applications				
CSNX-XHE2	12.2	44.4	CLIVETPack ²	106
Autonomous air-conditioners / Heat pumps - air source - roof top for full fresh air applications				
CSRN-XHE2-FFA	12.2	24.4	ClivetPACK ² FFA	108
Remote management systems				
Clivet Master System				110
P-Matic MULTIPLEX CLIMA Edition				112



Packaged air-conditioning unit

CKN-XHE2i: reversible heat pump

Air cooled

Roof Top

Capacity from 20 to 45 kW



Control keypad standard supplied:

Main functions:

- unit on/off
- unit main information
- daily/weekly programming
- temperature set-point modification
- humidity set-point modification
- manual or automatic summer/winter switching



Unit listed on
www.eurovent-certification.com



ErP compliant

functions and features



Heat pump



Air cooled



Outdoor installation



R-410A



Full Inverter DC



FREE-COOLING



Thermodynamic recovery



Electronically commutated Plug Fan



Electronic expansion valve

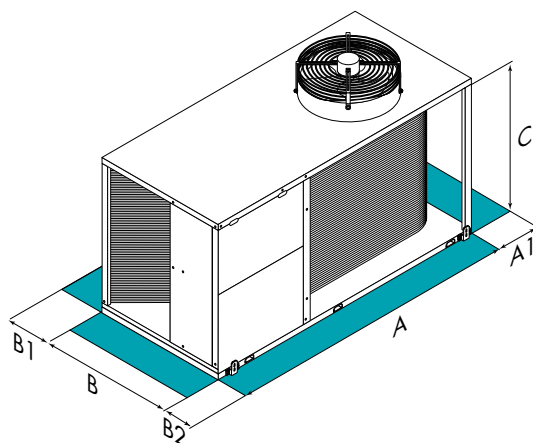


Constant Air Volume



Variable Air Volume

dimensions and clearances



Size - CKN-XHE2i		7.1	10.1	14.2
A - Length	mm	2250	2250	2610
B - Width	mm	1240	1310	1750
C - Height	mm	1210	1510	1660
A1	mm	1000	1000	1000
B1	mm	1000	1000	1000
B2	mm	1000	1000	1000
CAK/CBK	Operating weight	kg	464	576
CCK	Operating weight	kg	482	600
				853

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAK Full re-circulation (CAK)

CBK Recirculation and renewal air (CBK)

CCK Configuration with double fan section for recirculation, fresh and exhaust air

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

CONFIGURATION:

- **CAK** Configuration with single fan section for full recirculation
- **CBK** Configuration with single fan section for recirculation and fresh air
- **CCK** Configuration with double fan section for recirculation, fresh and exhaust air

technical data

Size – CKN-XHE2i			7.1	10.1	14.2
▶ Cooling capacity	(1)	kW	20,6	30,4	45,7
Sensible capacity	(1)	kW	16,5	24,6	35,9
Compressor power input	(1)	kW	5,27	8,28	11,5
EER	(1)	-	3,91	3,67	3,97
▶ Heating capacity	(7)	kW	20,9	29,8	43,8
Compressor power input	(7)	kW	5,08	7,24	9,89
COP		-	4,11	4,12	4,43
No. of compressors		Nr	1	1	2
Type of compressors	(2)	-	ROT	SCROLL	ROT
Sound pressure level	(6)	dB(A)	65	66	68
Refrigeration circuits		Nr		1	
Supply airflow		l/s	1111	1667	2500
Type of supply fan	(3)	-		RAD EC BRUSHLEES	
Number of supply fans		Nr		1	
Fan diameter		mm	450	500	560
Max. static pressure supply fan	(4)	Pa	380	680	510
Type of exhaust fan	(5)	-		RAD EC BRUSHLEES	
Number of exhaust fans	(5)	Nr		1	
External section fan		-		AX DC BRUSHLESS	
Standard power supply		V		400/3/50+N	
Directive ErP (Energy Related Products)					
SEER - AVERAGE Climate	(8)	-	4,39	4,14	4,20
SCOP - AVERAGE Climate	(8)	-	3,06	2,97	3,10

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Performance data are referred to operation with 30% of outdoor and exhaust air; (configuration CCK)

- (1) Ambient air at 27°C/19°C W.B. Entering external exchanger air temperature 35°C; EER referred only to compressors
- (2) SCROLL = scroll compressor
- (3) ROT = rotary compressor
- (4) RAD = radial fan

- (4) Net outside static pressure to win the outlet and intake onboard pressure drops
- (5) Configuration for outdoor air supply with exhaust and extraction; (only with CCK configuration)
- (6) The sound levels are referred to unit operating at full load in nominal conditions. The sound pressure level is referred at a distance of 1 m. from the ducted unit surface operating in free field conditions. External static pressure 50 Pa. (standard UNI EN ISO 9614-2)
- (7) Ambient temperature 20°C DB. Outside temperature 7°C DB/6°C WB; COP referred only to compressors
- (8) Data calculated according to the EN 14825:2016 Regulation

accessories

- **FCE** Enthalpy FREE-COOLING
- **PAQC** Air quality probe for CO2 rate check
- **PAQCV** Air quality sensor for CO2 and VOC rate check
- **SER** Outdoor air damper manually set (CBK version)
- **SERM** Outdoor air motorized on/off damper (CBK version)
- **SERMD** Modulating motorized outdoor air damper (CBK version)
- **PCOS** Constant supply airflow
- **PVAR** Variable airflow
- **GC01** Condensing gas heating module with modulating control 35kW
- **GC08** Condensing gas heating module with modulating control 44kW
- **GC09** Condensing gas heating module with modulating control 65kW
- **GC10** Condensing gas heating module with modulating control 82kW
- **PGFC** Finned coil protection grill
- **FES** Electronic filters
- **PSAF** Differential pressure switch for dirty air filters
- **CHW2** Two-rows hot water coil
- **3WVM** Modulating three-way valve
- **EH09** 4,5 kW electric heaters
- **EH10** 6 kW electric heaters
- **EH12** 9 kW electric heaters
- **EH15** 13.5 kW electric heaters
- **EH17** 18 kW electric heaters
- **EH20** 24 kW electric heaters
- **CPHG** Hot gas re-heating coil
- **HSE3** 3 kg/h electrode boiler steam humidifier
- **HSE5** 5 kg/h electrode boiler steam humidifier
- **HSE8** Immersed electrodes steam humidifier of 8 kg/h
- **MOB** Serial port RS485 with Modbus protocol
- **PM** Phase monitor
- **PFCP** Power factor correction capacitors (cosfi > 0.9)
- **AMRX** Rubber antivibration mounts

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

Packaged air-conditioning unit

CSRN-XHE2; reversible heat pump

Air cooled

Roof Top

Capacity from 55 to 148 kW

CLIVETPack² HSE

The packaged air-conditioning units **CLIVETPack² HSE** (High Seasonal Efficiency) are the evolution of Roof top units developed by Clivet for air handling. Designed for the air-conditioning of small and medium surface environments with medium attendance such as supermarkets, shops, offices and small production areas.

The entire range is designed for maximum seasonal efficiency. In fact the maximum capacity generated by the system is required for short periods of time only, it is therefore important to achieve maximum efficiency in partial load conditions. The technology is based on double cooling circuit with tandem scroll compressors, electronically controlled fans with brushless motors, large heat exchange surfaces, microprocessor control with adjustment for maximum energy efficiency.

► **Versatility of use:** the wide range of versions, options and accessories allow unique integration and flexibility of choice, regardless of the intended use and the external climate.

► **Easy to position and install:** the units are exceptionally compact, perfect for positioning on particularly crowded roofs and allow bottom or horizontal supply and return air. The units, pretested in the factory, feature immediate start-up thanks to the packaged approach, which includes everything the systems needs. It only requires to be connected to the electrical mains and the air system.



Unit listed on
www.eurovent-certification.com



ErP compliant

functions and features



Heat pump



Air cooled



Outdoor installation



R-410A



Hermetic Scroll



Ice protection system



FREE-COOLING



THOR
(Thermodynamic
Overboost Recovery)



ECOBREEZE



Electronically
commutated
Plug Fan



Electronic expansion
valve

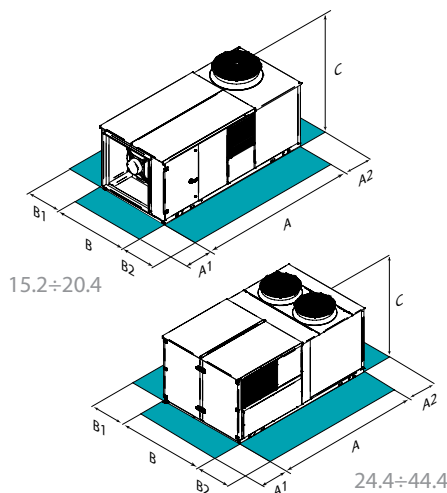


Constant Air Volume



Variable Air Volume

dimensions and clearances



Size – CSRN-XHE2		15.2	18.2	20.4	25.4	30.4	33.4	40.4	44.4
CAK	A - Length	mm	3400	3400	3725	3725	3725	3725	3725
CAK	B - Width	mm	1620	1620	2290	2290	2290	2290	2290
CAK	C - Height	mm	1610	1610	1610	1610	1610	1910	1910
CAK	A1	mm	1500	1500	1500	1500	1500	1500	1500
CAK	A2	mm	1500	1500	1500	1500	1500	1500	1500
CAK	B1	mm	1500	1500	1500	1500	1500	1500	1500
CAK	B2	mm	1500	1500	1500	1500	1500	1500	1500
CBK	Operating weight	kg	881	901	1426	1461	1471	1531	1563
CAK	Operating weight	kg	881	901	1426	1461	1471	1531	1563
CCK	Operating weight	kg	1015	1036	1634	1669	1679	1788	1820
CCKP	Operating weight	kg	1045	1066	1681	1715	1726	1847	1879

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAK Configuration with single fan section for full recirculation

CBK Configuration with single fan section for recirculation and fresh air

CCK Configuration with double fan section for recirculation, fresh and exhaust air

CCKP Configuration with double fan section with fresh air and THOR thermodynamic recovery

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

CONFIGURATION:

- **CAK** Configuration with single fan section for full recirculation (Standard)
- **CBK** Configuration with single fan section for recirculation and fresh air

- **CCK** Configuration with double fan section for recirculation, fresh and exhaust air
- **CCKP** Configuration with double fan section with fresh air and THOR thermodynamic recovery

technical data

Size – CSRN-XHE2			15.2	18.2	20.4	25.4	30.4	33.4	40.4	44.4
Eurovent			55,1	66,0	82,7	95,0	103	119	138	148
CCKP	► Cooling capacity	(1) kW	42,8	51,3	63,4	70,8	73,0	86,3	97,4	104
CCKP	Sensible capacity	(1) kW	12,7	16,6	20,1	21,8	25,2	28,0	35,0	38,8
CCKP	Compressor power input	(1) kW	4,34	3,98	4,11	4,36	4,10	4,25	3,94	3,80
CCKP	EER	(1) -	49,8	63,4	74,4	90,4	98,3	118	145	154
CCKP	► Heating capacity	(2) kW	9,35	11,9	15,2	17,5	20,4	23,4	28,9	32,9
CCKP	Compressor power input	(2) kW	5,33	5,33	4,89	5,17	4,82	5,04	5,03	4,68
CCKP	COP	(2) -	1		2		4			
CCKP	Refrigeration circuits	Nr	2		4					
CCKP	No. of compressors	Nr			SCROLL					
CCKP	Type of compressors	(3) -			RAD					
CCKP	Supply airflow	l/s	2500	3194	3750	4167	4722	5139	5833	6389
CCKP	Type of supply fan	(4) -			RAD					
CCKP	Number of supply fans	Nr	1				2			
CCKP	Fan diameter	mm	630	630	560	560	560	630	630	630
CCKP	Max. static pressure supply fan	(5) Pa	510	390	510	510	510	510	440	380
CCKP	Type of exhaust fan	(6) -			RAD					
CCKP	Number of exhaust fans	Nr	1				2			
CCKP	Standard power supply	V			400/3/50					
CCKP	Sound pressure level	(7) dB(A)	64	66	67	68	69	70	71	72
Directive ErP (Energy Related Products)										
SEER - AVERAGE Climate	(8) -		3,98	3,80	3,79	3,78	3,59	4,12	3,95	3,69
SCOP - AVERAGE Climate	(8) -		2,98	3,13	2,99	3,14	3,00	3,26	3,54	3,34

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Performances are referred to the operating with 30% of exhaust and outdoor air with THOR thermodynamic recovery (CCKP)

- (1) Ambient air at 27°C D.B./19°C W.B. Entering external exchanger air temperature 35°C; EERc referred only to compressors
- (2) Ambient temperature 20°C DB. Outside temperature 7°C DB/6°C WB; COP referred only to compressors
- (3) SCROLL = scroll compressor
- (4) RAD = radial fan
- (5) Net outside static pressure to win the outlet and intake onboard pressure drops

- (6) Configuration with double fan section for recirculation, fresh air, exhaust, thermodynamic recovery (CCK) and configuration with double fan section with renewal air and THOR thermodynamic recovery (CCKP)
- (7) The sound levels are referred to unit operating at full load in nominal conditions. The sound pressure level is referred at a distance of 1 m. from the ducted unit surface operating in free field conditions.External static pressure 50 Pa. (standard UNI EN ISO 9614-2)
- (8) Data calculated according to the EN 14825:2016 Regulation

CCKP Configuration with double fan section with fresh air and THOR thermodynamic recovery

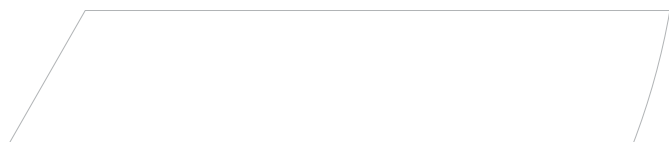
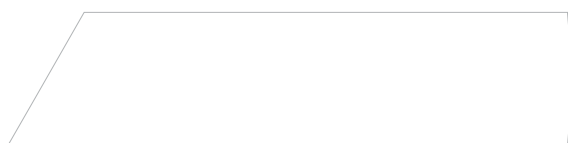
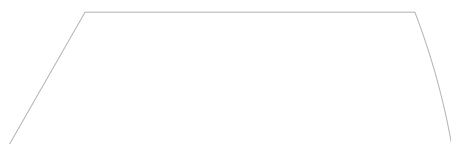
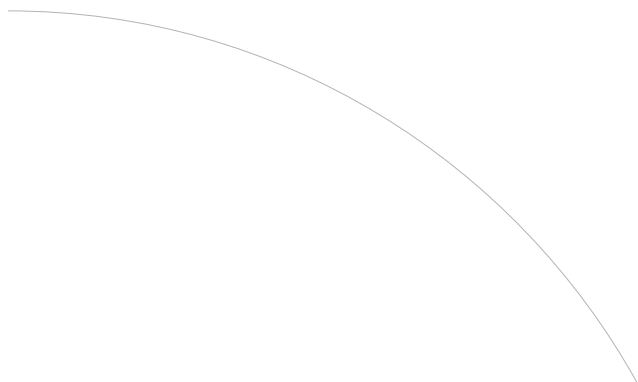
accessories

► REC	Exhaust air thermodynamic energy recovery (CCK version)	► GC08X	Condensing gas heating module with modulating control 44kW (sizes 20.4÷30.4)
► THR	Exhaust air THOR thermodynamic energy recovery (CCKP version)	► GC10X	Condensing gas heating module with modulating control 82kW (sizes 20.4÷44.4)
► FC	Thermal FREE-COOLING	► GC12X	Condensing gas heating module with modulating control 130kW (sizes 33.4÷44.4)
► FCE	Enthalpy FREE-COOLING	► GC11X	Condensing gas heating module with modulating control 100kW (sizes 20.4÷44.4)
► M3	Downward air supply	► GD11	Gas heating module with 2-stage control 35kW (sizes 15.2÷18.2)
► M5	Upflow air supply	► GD11X	Gas heating module with 2-stage control 35kW (sizes 20.4÷30.4)
► ML	Sideward air supply (sizes 15.2÷18.2)	► GD13	Gas heating module with 2-stage control 53kW (sizes 15.2÷18.2)
► R3	Downward air return	► GD13X	Gas heating module with 2-stage control 53kW (sizes 20.4÷44.4)
► SER	Outdoor air damper manually set (CBK version)	► GD12	Gas heating module with 2-stage control 44kW (sizes 15.2÷18.2)
► SERM	Outdoor air motorized on/off damper (CBK version)	► GD12X	Gas heating module with 2-stage control 44kW (sizes 20.4÷30.4)
► SERMD	Modulating motorized outdoor air damper (CBK, CCK, CCKP version)	► GD14	Gas heating module with 2-stage control 74kW (sizes 15.2÷18.2)
► PVAR	Variable airflow	► GD14X	Gas heating module with 2-stage control 74kW (sizes 20.4÷44.4)
► PCOSM	Constant supply airflow	► GD15X	Gas heating module with 2-stage control 100kW (sizes 20.4÷44.4)
► PAQC	Air quality probe for CO ₂ rate check	► GD16X	Gas heating module with 2-stage control 147kW (sizes 33.4÷44.4)
► PAQCV	Air quality sensor for CO ₂ and VOC rate check	► LTEMP1	Application for low outdoor temperature
► CREFB	Device for fan consumption reduction of the external section, ECOBREEZE type	► CPHG	Hot gas re-heating coil
► VENH	High static pressure fans	► HSE3	3 kg/h immersed electrodes steam humidifier
► F7	High efficiency F7 air filter	► HSE5	5 kg/h immersed electrodes steam humidifier
► FES	Electronic filters	► HSE8	8 kg/h immersed electrodes steam humidifier
► PSAF	Differential pressure switch for dirty air filters	► HSE9	15 kg/h immersed electrodes steam humidifier
► EH12	9 kW electric heaters (sizes 15.2÷18.2)	► HWS	Water to waste evaporating wet-deck humidifier
► EH14	12 kW electric heaters (sizes 15.2÷30.4)	► MHP	High and low pressure gauges
► EH17	18 kW electric heaters	► CMSC9	Serial communication module for Modbus supervisor
► EH20	24 kW electric heaters (sizes 20.4÷44.4)	► CMSC10	Serial communication module for LonWorks supervisor
► EH24	36 kW electric heaters (sizes 33.4÷44.4)	► CMSC11	Serial communication module for BACnet-IP supervisor
► CHW2	Two-rows hot water coil	► CSOND	Temperature and humidity ambient control with built-in probes
► CHWER	Energy recovery from food refrigeration	► DML	Demand Limit
► 3WVM	Modulating 3-way valve	► PM	Phase monitor
► 2WVM	Modulating 2-way valve	► PFCP	Power factor correction capacitors (cosφ > 0.9)
► GC01	Condensing gas heating module with modulating control 35kW (sizes 15.2÷18.2)	► DESM	Smoke detector
■ ► GC01X	Condensing gas heating module with modulating control 35kW (sizes 20.4÷30.4)	► SFSTC	Progressive compressor start-up device
► GC09	Condensing gas heating module with modulating control 65kW (sizes 15.2÷18.2)	► CLMX	Clivet Master System
■ ► GC09X	Condensing gas heating module with modulating control 65kW (sizes 20.4÷44.4)	► PCMO	Sandwich panels of the handling zone in M0 fire reaction class
► GC08	Condensing gas heating module with modulating control 44kW (sizes 15.2÷18.2)	► AMRX	Rubber antivibration mounts
		► AMRMX	Rubber antivibration mounts for unit and gas module (sizes 20.4÷44.4)
		► RCX	Roof curb

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.



Packaged air-conditioning unit

CSRT-XHE2: cooling only

CSRN-XHE2: heat pump

Air cooled

Roof Top

Capacity from 155 to 376 kW

CLIVETPack²

The packaged air-conditioning units of the **CSRT-XHE2** and **CSRN-XHE2** series are the technological evolution of Rooftop units developed by Clivet for air-handling purposes. Designed for the air-conditioning of medium-sized and large surfaces with average crowding levels, such as supermarkets, commercial areas, manufacturing areas, railway stations and airports.

► **Versatile use:** the wide series of versions, options and accessories allow for a flexible selection and unique integration, regardless of the intended use and weather outdoors.

► **Easy to position and install:** the units have an exceptionally compact design and they are also perfect for crowded coverings, they allow for the air supply and return to be horizontal or from below. The units, pre-tested by the manufacturer, start-up immediately thanks to our 'packaged' approach, which includes anything necessary for the system, only requiring the connection to the mains and aerulic network.

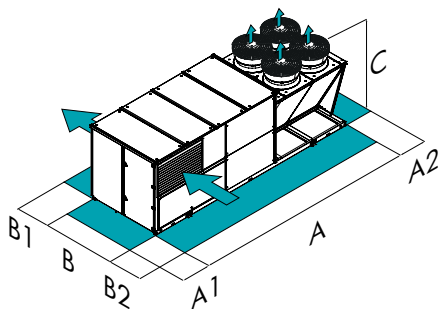
► **Sturdiness and energy savings:** thanks to the high efficiency of the refrigeration circuit optimized for operation at partial load, the free-cooling, the standard supplied heat recovery on all models with an air exhaust system, the optional electronic filtering system, the automatic control of the air flow and the variable air flow function, energy consumption levels and, as a result, running costs, are considerably lower.



functions and features



dimensions and clearances



CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size – CSRT-XHE2		49.4	54.4	60.4	70.4	80.4	90.4	100.4	110.4
CAK	A - Length	mm	5250	5250	6670	6670	6670	8510	8510
CAK	B - Width	mm	2326	2326	2326	2326	2326	2326	2326
CAK	C - Height	mm	2410	2410	2410	2410	2410	2410	2410
CAK	A1	mm	1500	1500	1500	1500	1500	1500	1500
CAK	A2	mm	1500	1500	1500	1500	1500	1500	1500
CAK	B1	mm	1500	1500	1500	1500	1500	1500	1500
CAK	B2	mm	1500	1500	1500	1500	1500	1500	1500
CBK	Operating weight	kg	2102	2418	2573	2765	3181	3283	3528
CAK	Operating weight	kg	2102	2418	2573	2765	3181	3283	3528
CCKP	Operating weight	kg	2313	2630	2851	3043	3460	3637	4414

Size – CSRN-XHE2		49.4	54.4	60.4	70.4	80.4	90.4	100.4	110.4
CAK	A - Length	mm	5250	5250	6670	6670	6670	8510	8510
CAK	B - Width	mm	2326	2326	2326	2326	2326	2326	2326
CAK	C - Height	mm	2410	2410	2410	2410	2410	2410	2410
CAK	A1	mm	1500	1500	1500	1500	1500	1500	1500
CAK	A2	mm	1500	1500	1500	1500	1500	1500	1500
CAK	B1	mm	1500	1500	1500	1500	1500	1500	1500
CAK	B2	mm	1500	1500	1500	1500	1500	1500	1500
CBK	Operating weight	kg	2189	2512	2688	2880	3305	3430	3674
CAK	Operating weight	kg	2189	2512	2688	2880	3305	3430	3674
CCK	Operating weight	kg	2304	2628	2839	3031	3457	3622	3867
CCKP	Operating weight	kg	2400	2724	2966	3158	3583	3784	4029

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAK Configuration with single fan section for full recirculation
 CBK Configuration with single fan section for recirculation and fresh air
 CCKP Configuration with double fan section with fresh air and THOR thermodynamic recovery
 CCK Configuration with double fan section for recirculation, fresh and exhaust air

versions and configurations

CONFIGURATION:

- **CAK** Configuration with single fan section for full recirculation (Standard)
- **CBK** Configuration with single fan section for recirculation and fresh air
- **CCK** Configuration with double fan section for recirculation, fresh and exhaust air

► CCKP

Configuration with double fan section with fresh air and THOR thermodynamic recovery

TYPE FAN EXTERNAL SECTION:

- **AXI** High efficiency diffuser for axial fan - AxiTop (Standard)

technical data

Size – CSRT-XHE2			49.4	54.4	60.4	70.4	80.4	90.4	100.4	110.4
CCKP	► Cooling capacity	(1) kW	174	185	220	241	279	334	355	375
CCKP	Sensible capacity	(1) kW	128	138	160	180	202	244	256	273
CCKP	Compressor power input	(1) kW	41,5	45,5	50,6	59,6	65,5	76,8	85,7	96,3
CCKP	EER	(1) -	4,20	4,07	4,34	4,05	4,25	4,35	4,14	3,89
CCKP	Refrigeration circuits	Nr	2							
CCKP	No. of compressors	Nr	4							
CCKP	Type of compressors	(2) -	Scroll							
CCKP	Supply airflow	l/s	7222	8056	9167	10278	12222	14167	15556	16667
CCKP	Type of supply fan	(3) -	RAD							
CCKP	Number of supply fans	Nr	3	3	4	4	4	6	6	6
CCKP	Fan diameter	mm	560	560	560	560	560	560	560	560
CCKP	Max. static pressure supply fan	(4) Pa	630	540	660	570	360	620	540	460
CCKP	Type of exhaust fan	(3) -	RAD	RAD	RAD	RAD	RAD	RAD	RAD	RAD
CCKP	Number of exhaust fans	(5) Nr	2							
CCKP	Standard power supply	V	400/3/50							
CCKP	Sound pressure level	(6) dB(A)	72	72	72	73	74	76	77	78
Directive ErP (Energy Related Products)										
SEER - AVERAGE Climate	(8) -		3,45	3,30	3,47	3,64	3,72	4,12	3,67	3,50
Size – CSRN-XHE2			49.4	54.4	60.4	70.4	80.4	90.4	100.4	110.4
CCKP	► Cooling capacity	(1) kW	175	186	220	242	280	336	356	376
CCKP	Sensible capacity	(1) kW	129	139	160	180	202	247	256	274
CCKP	Compressor power input	(1) kW	41,1	45,1	50,1	59,0	65,1	76,4	85,1	95,3
CCKP	EER	(1) -	4,26	4,12	4,40	4,10	4,29	4,40	4,18	3,95
CCKP	► Heating capacity	(7) kW	176	187	218	241	279	330	353	382
CCKP	Compressor power input	(7) kW	32,8	36,5	40,3	46,3	53,0	62,1	67,3	75,0
CCKP	COP	(7) -	5,38	5,11	5,42	5,21	5,27	5,32	5,25	5,10
CCKP	Refrigeration circuits	Nr	2							
CCKP	No. of compressors	Nr	4							
CCKP	Type of compressors	(2) -	Scroll							
CCKP	Supply airflow	l/s	7222	8056	9167	10278	12222	14167	15556	16667
CCKP	Type of supply fan	(3) -	RAD							
CCKP	Number of supply fans	Nr	3		4			6		
CCKP	Fan diameter	mm	560	560	560	560	560	560	560	560
CCKP	Max. static pressure supply fan	(4) Pa	630	540	660	570	360	620	540	460
CCKP	Type of exhaust fan	(5) -	RAD							
CCKP	Number of exhaust fans	(5) Nr	2							
CCKP	Standard power supply	V	400/3/50							
CCKP	Sound pressure level	(6) dB(A)	72	72	72	73	74	76	77	78
Directive ErP (Energy Related Products)										
SEER - AVERAGE Climate	(8) -		3,88	3,46	3,84	3,71	3,67	3,95	3,55	3,40
SCOP - AVERAGE Climate	(8) -		3,31	3,12	3,10	3,06	3,05	3,04	3,00	3,10

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Performances are referred to the operating with 30% of exhaust and outdoor air with THOR thermodynamic recovery (CCKP)

- (1) Ambient air at 27°C D.B./19°C W.B. Entering external exchanger air temperature 35°C; EER referred only to compressors
- (2) SCROLL = scroll compressor
- (3) RAD = radial fan
- (4) Net outside static pressure to win the outlet and intake onboard pressure drops
- (5) Configuration with double fan section for recirculation, fresh air, exhaust, thermodynamic recovery (CCK) and configuration with double fan section with renewal air and THOR thermodynamic recovery (CCKP)

- (6) The sound levels are referred to unit operating at full load in nominal conditions. The sound pressure level is referred at a distance of 1 m. from the ducted unit surface operating in free field conditions. External static pressure 50 Pa. (standard UNI EN ISO 9614-2)

- (7) Ambient air at 20°C D.B. external exchanger entering air 7°C/6°C W.B. COP referred only to compressors
- (8) Data calculated according to the EN 14825:2016 Regulation

CCKP Configuration with double fan section with fresh air and THOR thermodynamic recovery



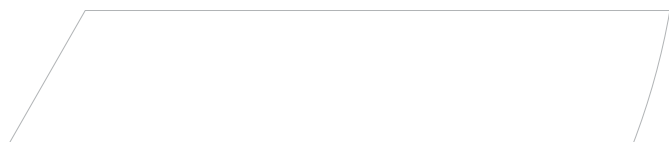
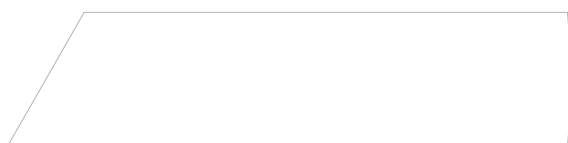
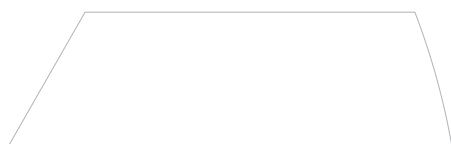
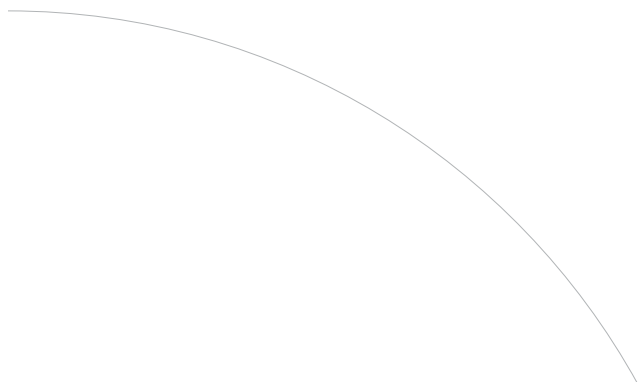
accessories

- **THR** Exhaust air THOR thermodynamic energy recovery (CCKP version)
- **REC** Exhaust air thermodynamic energy recovery (CCK version)
- **FC** Thermal FREE-COOLING
- **FCE** Enthalpy FREE-COOLING
- **M3** Downward air supply
- **M5** Upflow air supply
- **R3** Downward air return
- **SER** Outdoor air damper manually set
- **SERM** Outdoor air motorized on/off damper
- **SFCM** Modulating motorized FREE-COOLING damper
- **SFCEM** Modulating motorized FREE-COOLING damper and min. outdoor air motorized on-off damper
- **PVAR** Variable airflow
- **PCOSM** Constant supply airflow
- **PAQC** Air quality probe for CO₂ rate check
- **PAQCV** Air quality sensor for CO₂ and VOC rate check
- **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type
- **VENH** High static pressure fans
- **F7** High efficiency F7 air filter
- **FES** Electronic filters
- **PSAF** Differential pressure switch for dirty air filters
- **EH20** 24 kW electric heaters
- **EH24** 36 kW electric heaters
- **EH28** 48 kW electric heaters
- **CHW2** Two-rows hot water coil
- **CHWER** Energy recovery from food refrigeration
- **3WVM** Modulating three-way valve
- **2WVM** Modulating 2-way valve
- **GD14X** Gas heating module with 2-stage control 74kW (sizes 49.4÷54.4)
- **GD16X** Gas heating module with 2-stage control 147kW
- **GD15X** Gas heating module with 2-stage control 100kW (sizes 49.4÷80.4)
- **GD17X** Gas heating module with 2-stage control 200kW (sizes 60.4÷110.4)
- **GD18X** Gas heating module with 2-stage control 300kW (sizes 90.4÷110.4)
- **GC09X** Condensing gas heating module with modulating control 65kW (sizes 49.4÷54.4)
- **GC12X** Condensing gas heating module with modulating control 130kW (sizes 49.4÷54.4, 90.4÷110.4)
- **GC10X** Condensing gas heating module with modulating control 82kW (sizes 49.4÷80.4)
- **GC13X** Condensing gas heating module with modulating control 164kW (sizes 60.4÷110.4)
- **GC11X** Condensing gas heating module with modulating control 100kW (sizes 49.4÷80.4)
- **GC06X** Condensing gas heating module with modulating control 200kW (sizes 60.4÷110.4)
- **GC07X** Condensing gas heating module with modulating control 300kW (sizes 90.4÷110.4)
- **LTEMP1** Application for low outdoor temperature
- **CPHG** Hot gas re-heating coil
- **HSE8** 8 kg/h immersed electrodes steam humidifier
- **HSE9** 15 kg/h immersed electrodes steam humidifier
- **HWS** Water to waste evaporating wet-deck humidifier
- **MHP** High and low pressure gauges
- **MOB** Serial port RS485 with Modbus protocol
- **LON** Serial port RS485 with LonWorks protocol
- **BACIP** BACnet-IP serial communication module
- **SIX** Service interface (cable of 1,5 metres)
- **MF2** Multi-function phase monitor
- **PFCP** Power factor correction capacitors (cosφ > 0.9)
- **DESM** Smoke detector
- **DML** Demand Limit
- **CLMX** Clivet Master System
- **PCMO** Sandwich panels of the handling zone in M0 fire reaction class
- **AMRX** Rubber antivibration mounts
- **AMRMX** Rubber antivibration mounts for unit and gas module
- **RCX** Roof curb
- **CECA** Copper / aluminium evaporator coil with acrylic lining
- **CCCA** Copper / aluminium condenser coil with acrylic lining
- CSRT-XHE2 only:**
- **RCAW** Active winter thermodynamic recovery on expelled air

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.



Packaged air-conditioning unit

Reversible heat pump

Air cooled

Roof Top

Capacity from 47 to 174 kW

CLIVETPack²



The autonomous air-conditioners of the **CSNX-XHE2** series are Roof-top type units developed by Clivet using the most recent and advanced technologies available on the market dedicated to the treatment of air. Intended for the airconditioning of high attendance areas such as Congress Centers, cinemas, theaters, restaurants, bars, discoteques.

- **Versatility of use:** the wide range of versions, options and accessories allow unique integration and flexibility of choice, regardless of the intended use and the external climate.
- **Easy to position and install:** the units are exceptionally compact, perfect for positioning on particularly crowded roofs. The units, pre-tested in the factory, feature immediate start-up thanks to the packaged approach, which includes everything the systems needs. It only requires to be connected to the electrical mains and the air system.
- **Reduced management costs:** thanks to the high efficiency of the innovative refrigeration circuit optimized for the functioning at partial load, of free-cooling, of the heat recoverer, of optional electrostatic air filters, of the automatic control and adjustment of all air flows drastically reduce the energy consumption and therefore the management costs.



Unit listed on
www.eurovent-certification.com



ErP compliant

functions and features



Heat pump



Air cooled



Outdoor installation



R-410A



Hermetic Scroll



Ice protection system



FREE-COOLING



THOR
(Thermodynamic
recovery)



ECOBREEZE



Electronically
commutated
Plug Fan



Electronic expansion
valve

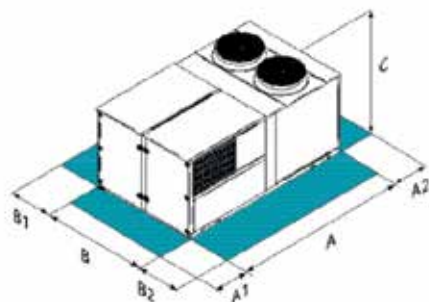


Constant Air Volume



Variable Air Volume

dimensions and clearances



Size – CSNX-XHE2		12.2	15.2	16.4	20.4	24.4	33.4	40.4	44.4
CCKP	A - Length	mm	3040	3040	4050	4050	4650	4650	4650
CCKP	B - Width	mm	2625	2625	2625	2625	2625	2625	2625
CCKP	C - Height	mm	1560	1560	1650	1650	1930	1930	1930
CCKP	A1	mm	1500	1500	1500	1500	1500	1500	1500
CCKP	A2	mm	1500	1500	1500	1500	1500	1500	1500
CCKP	B1	mm	1500	1500	1500	1500	1500	1500	1500
CCKP	B2	mm	1500	1500	1500	1500	1500	1500	1500
CCKP	Operating weight	kg	1448	1472	1607	1642	1676	1847	1883

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CCKP Configuration with double fan section with fresh air and THOR thermodynamic recovery-Small gas module

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

CONFIGURATION:

► **CCK** Configuration with double fan section for recirculation, fresh and exhaust air

► CCKP

Configuration with double fan section with fresh air and THOR thermodynamic recovery

technical data

Size – CSNX-XHE2				12.2	15.2	16.4	20.4	24.4	33.4	40.4	44.4
Eurovent									-	-	-
CCKP	▶ Cooling capacity	(1)	kW	47,3	59,5	75,4	87,6	106,7	134,4	158,3	173,9
CCKP	Sensible capacity	(1)	kW	29,3	39,2	51,4	57,2	71,2	92,7	110,4	119,8
CCKP	Compressor power input	(1)	kW	9,2	12,3	15,5	19,4	22,8	28,0	35,2	39,5
CCKP	EER	(1)	-	5,15	4,84	4,86	4,52	4,68	4,80	4,50	4,40
CCKP	▶ Heating capacity	(2)	kW	44,5	54,6	71,5	81,1	99,2	121,1	149,5	165,7
CCKP	Compressor power input	(2)	kW	8,6	11,1	13,7	15,0	17,0	20,6	25,3	29,4
CCKP	COP	(2)	-	5,20	4,92	5,22	5,41	5,84	5,88	5,91	5,64
CCKP	Refrigeration circuits		Nr	2							
CCKP	No. of compressors		Nr	2		4					
CCKP	Type of compressors	(3)	-	Scroll							
CCKP	Supply airflow		l/s	1250	1806	2222	2500	3333	3889	4444	5000
CCKP	Type of supply fan	(4)	-	RAD							
CCKP	Number of supply fans		Nr	1				2			
CCKP	Fan diameter		mm	500	500	560	560	560	630	630	630
CCKP	Max. static pressure supply fan	(5)	Pa	830	645	585	515	300	610	565	515
CCKP	Type of exhaust fan		-	RAD							
CCKP	Number of exhaust fans	(4)	Nr	1				2			
CCKP	Standard power supply		V	400/3/50							
ST	Sound pressure level	(6)	dB(A)	65	66	67	68	69	70	71	72
Directive ErP (Energy Related Products)											
SEER - AVERAGE Climate	(7)	-		3,4	3,18	4,04	4,13	4,05	3,64	4,04	4,03
SCOP - AVERAGE Climate	(7)	-		2,95	2,95	2,97	3,13	3,31	3,48	3,62	3,53

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Performance refers to operation with 80% of expelled and outdoor air

- (1) Ambient air at 27°C/19°C W.B. Entering external exchanger air temperature 35°C; EER referred only to compressors
 (2) Ambient air at 20°C D.B /13,7°C W.B. external exchanger entering air 7°C / 6°C W.B. COP referred only to compressors

- (3) SCROLL = scroll compressor
 (4) RAD = radial fan
 (5) Net outside static pressure to win the outlet and intake onboard pressure drops
 (6) The sound levels are referred to unit operating at full load in nominal conditions. The sound pressure level is referred at a distance of 1 m. from the ducted unit surface operating in free field conditions. External static pressure 50 Pa. (standard UNI EN ISO 9614-2)
 (7) Data calculated according to the EN 14825:2016 Regulation

accessories

- **THR** Exhaust air THOR thermodynamic energy recovery (CCKP version)
- **FCE** Enthalpy FREE-COOLING
- **M3** Downward air supply
- **M5** Upflow air supply
- **R3** Downward air return
- **SERMD** Modulating motorized outdoor air damper
- **PVAR** Variable airflow
- **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type
- **VENH** High static pressure fans
- **EXFLOWC** Application in spaces with forced air exhaust at variable flow and exhaust section
- **F7** High efficiency F7 air filter
- **FES** Electronic filters
- **PSAF** Differential pressure switch for dirty air filters
- **PAQC** Air quality probe for CO2 rate check
- **PAQCV** Air quality sensor for CO2 and VOC rate check
- **EH10** 6 kW electric heaters
- **EH12** 9 kW electric heaters
- **EH17** 18 kW electric heaters
- **EH15** 13,5 kW electric heaters
- **EH22** 27 kW electric heaters
- **EH24** 36 kW electric heaters
- **CHW2** Two-rows hot water coil
- **3WVM** Modulating three-way valve
- **2WVM** Modulating 2-way valve
- **GC01X** Condensing gas heating module with modulating control 35kW
- **GC08X** Condensing gas heating module with modulating control 44kW
- **GC09X** Condensing gas heating module with modulating control 65kW

- **GC10X** Condensing gas heating module with modulating control 82kW
- **GC11X** Condensing gas heating module with modulating control 100kW
- **GC12X** Condensing gas heating module with modulating control 130kW
- **LTEMP1** Application for low outdoor temperature
- **CPHG** Hot gas re-heating coil
- **HSE3** 3 kg/h immersed electrodes steam humidifier
- **HSE5** 5 kg/h immersed electrodes steam humidifier
- **HSE8** 8 kg/h immersed electrodes steam humidifier
- **HWS** Water to waste evaporating wet-deck humidifier
- **HSE9** 15 kg/h immersed electrodes steam humidifier
- **MHP** High and low pressure gauges
- **CMSC9** Serial communication module for Modbus supervisor
- **CMSC10** Serial communication module for LonWorks supervisor
- **CMSC11** Serial communication module for BACnet-IP supervisor
- **CTERM** Remote keypad for indoor temperature and humidity control
- **CSOND** Temperature and humidity ambient control with built-in probes
- **DML** Demand Limit
- **PM** Phase monitor
- **DESM** Smoke detector
- **PFCF** Power factor correction capacitors (cosfi > 0.9)
- **SFSTC** Progressive compressor start-up device
- **CLMX** Clivet Master System
- **PCMO** Sandwich panels of the handling zone in M0 fire reaction class
- **AMRX** Rubber antivibration mounts
- **AMRMX** Rubber antivibration mounts for unit and gas module
- **RCX** Roof curb
- **AXI** High efficiency diffuser for axial fan - AxiTop

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

Packaged air-conditioning unit

CSRN-XHE2 FFA: reversible heat pump

Air cooled

Roof Top

Capacity from 33 to 90 kW



Electronic wall-mounting room thermostat

pAD Main functions:

- unit on/off
- manual or automatic summer/winter switching
- temperature set-point modification
- humidity set-point modification
- unit main information

CLIVETPack² FFA

The packaged air-conditioning units of the **CSRN-XHE2 FFA** series are Roof-top type units developed by Clivet using the most recent and advanced technologies available on the market dedicated to the treatment of air. Destined to the air-conditioning of all those environments that need full fresh air-conditioning that feature suction hoods such as kitchens, laboratories, projection rooms, etc..

- **Versatility of use:** the wide range of versions, options and accessories allow unique integration and flexibility of choice, regardless of the intended use. During winter it is able to condition with full fresh air just through electrical supply up to -12°C and below such temperature air-conditioning is possible via pre-heating with a hot water or gas module coil.
- **Easy to position and install:** the units are exceptionally compact, perfect for positioning on particularly crowded roofs. The units, pretested in the factory, feature immediate start-up thanks to the packaged approach, which includes everything the systems needs. It only requires to be connected to the electrical mains and the air system.
- **Reduced management costs:** thanks to the high efficiency of the innovative refrigeration circuit optimized for the functioning at partial load, of free-cooling, of the standard heat recoverer on all models featuring air exhaust, of optional electrostatic air filters, of the automatic control and adjustment of all air flows drastically reduce the energy consumption and therefore the management costs.

functions and features



Heat pump



Air cooled



Outdoor installation



R-410A



Hermetic Scroll



Ice protection system



FREE-COOLING



Thermodynamic recovery



ECOBREEZE



Electronically commutated Plug Fan



Electronic expansion valve

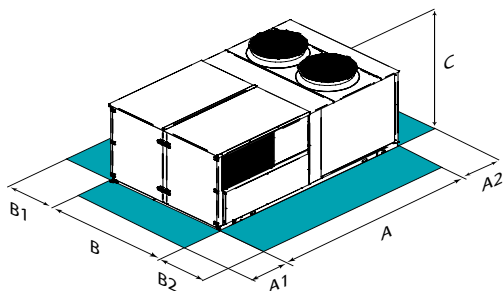


Adaptive+



Constant Air Volume

dimensions and clearances



Size – CSRN-XHE2-FFA			12.2	16.2	20.4	22.4	24.4
CBFFA	A - Length	mm	2090	2090	3110	3110	3110
CBFFA	B - Width	mm	2300	2300	2300	2300	2300
CBFFA	C - Height	mm	1560	1560	1650	1650	1650
CBFFA	A1	mm	1500	1500	1500	1500	1500
CBFFA	A2	mm	1500	1500	1500	1500	1500
CBFFA	B1	mm	1500	1500	1500	1500	1500
CBFFA	B2	mm	1500	1500	1500	1500	1500
CCFFA	Operating weight	kg	1401	1425	1560	1595	1629
CBFFA	Operating weight	kg	1273	1297	1358	1393	1427

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CBFFA Configuration for fresh air supply only

CCFFA Configuration for fresh air supply with extraction and exhaust

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

CONFIGURATION:

- **CBFFA** Configuration for fresh air supply only (Standard)
- **CCFFA** Configuration for fresh air supply with extraction and exhaust

technical data

Size – CSRN-XHE2-FFA				12.2	16.2	20.4	22.4	24.4	
CBFFA	Cooling capacity	(1)	kW	33,1	49,5	76,1	83,4	90,4	
CBFFA	Sensible capacity	(1)	kW	18,8	27,8	38,3	43,3	48,0	
CBFFA	Compressor power input	(1)	kW	9,20	12,9	20,0	21,7	23,3	
CBFFA	EER	(1)	-	3,60	3,84	3,81	3,84	3,88	
CBFFA	Heating capacity	(2)	kW	39,6	50,0	73,2	81,4	89,5	
CBFFA	Compressor power input	(2)	kW	9,90	11,9	17,2	18,2	20,7	
CBFFA	COP	(2)	-	4,00	4,20	4,26	4,47	4,32	
CBFFA	Refrigeration circuits		Nr	2	2	2	2	2	
CBFFA	No. of compressors		Nr	2		4			
CBFFA	Type of compressors	(3)	-	SCROLL					
CBFFA	Supply airflow		l/s	944	1250	1667	1944	2222	
CBFFA	Type of supply fan	(4)	-	RAD					
CBFFA	Number of supply fans		Nr	1					
CBFFA	Fan diameter		mm	400	400	560	560	560	
CBFFA	Max. static pressure supply fan	(5)	Pa	675	470	775	730	650	
CBFFA	Standard power supply		V	400/3/50					
Sound pressure level				dB(A)	65	66	67	68	69

Notes

Erp (Energy Related Products) European Directive, that includes the Commission delegated Regulation (EU) No 2016/2281 also known as Ecodesign Lot21, does not report this Product category.

(1) Ambient air at 27°C D.B./19°C W.B. Outdoor air temperature: 35°C D.B./ 24°C W.B; EER referred only to compressors

(2) Ambient temperature 20°C DB. Outside temperature 7°C DB/6°C WB; COP referred only to compressors

(3) SCROLL = scroll compressor

(4) RAD = radial fan

(5) Available nett pressure to overcome the supply

CBFFA Configuration for fresh air supply only

accessories

- **RE1** Thermodynamic heat recovery system (construction configuration C)
- **M3** Downward air supply
- **M5** Upflow air supply
- **R3** Downward air return
- **DAOP** Over pressure damper
- **PCOSM** Constant supply airflow
- **PCOSME** Constant airflow in supply and exhaust
- **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type
- **VENH** High static pressure fans
- **F7** High efficiency F7 air filter
- **FES** Electronic filters
- **PSAF** Differential pressure switch for dirty air filters
- **EH17** 18 kW electric heaters
- **EH22** 27 kW electric heaters (sizes 20.4÷24.4)
- **EH12** 9 kW electric heaters (sizes 12.2÷16.2)
- **EH14** 12 kW electric heaters (sizes 12.2÷16.2)
- **CHW2** Two-rows hot water coil
- **3WVM** Modulating three-way valve
- **2WVM** Modulating 2-way valve
- **GC08X** Condensing gas heating module with modulating control 44kW
- **GC09X** Condensing gas heating module with modulating control 65kW
- **GC10X** Condensing gas heating module with modulating control 82kW (sizes 20.4÷24.4)
- **GC01X** Condensing gas heating module with modulating control 35kW (sizes 12.2÷16.2)
- **LTEMP1** Application for low outdoor temperature
- **CPHG** Hot gas re-heating coil
- **HSE8** 8 kg/h immersed electrodes steam humidifier
- **HSE9** 15 kg/h immersed electrodes steam humidifier (sizes 20.4÷24.4)
- **HWS** Water to waste evaporating wet-deck humidifier
- **HSE5** 5 kg/h immersed electrodes steam humidifier (sizes 12.2÷16.2)
- **MHP** High and low pressure gauges
- **CMSC9** Serial communication module for Modbus supervisor
- **CMSC10** Serial communication module for LonWorks supervisor
- **CMSC11** Serial communication module for BACnet-IP supervisor
- **CTERM** Remote keypad for indoor temperature and humidity control
- **PM** Phase monitor
- **PFCP** Power factor correction capacitors (cosφ > 0.9)
- **SFSTC** Progressive compressor start-up device
- **CLMX** Clivet Master System
- **PCM0** Sandwich panels of the handling zone in M0 fire reaction class
- **AMRX** Rubber antivibration mounts
- **AMRMX** Rubber antivibration mounts for unit and gas module
- **RCX** Roof curb

Key to symbols and notes

■ Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

Clivet Master System

Control device for Packaged systems



- ▶ Centralised management of packaged units
- ▶ Up to 6 units
- ▶ Intuitive interface for the non specialised user
- ▶ Access to sensitive parameters is password protected
- ▶ Unit rotation and other group logics

Our Remote Management System for units

Clivet Master System is the ideal unit remote control system for packaged climate control units. Thanks to a single control units, with built in touch display, it is possible to access in a simple and intuitive manner all information on system and climate control unit status.

Some of its main functions:

- ▶ auto-detection of units connected
- ▶ setting all parameters for the system and the individual unit
- ▶ alarms display and management
- ▶ timed operation programming
- ▶ unit rotation even for an individual zone

Clivet Master System is pre-set for built-in installation and is equipped with devices for 230V single-phase power supply and for serial communication with rooftop units. Each unit must be equipped with a RS485 Modbus serial port.

Serial communication allows remote distances of up to 1000 m.



Technical data

Power supply nominal voltage:	230 / 1 / 50
Display:	8" LCD Touch Screen
Degree of protection:	IP65
Connectivity:	1 x RS485 / 1 x front USB for exporting alarms history file



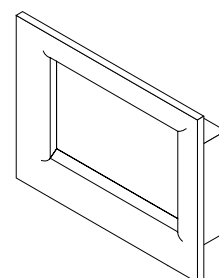
Field of use

Operational temperature:	from 0°C to 50°C
Stocking temperature:	from -20°C to +60°C
Relative humidity:	from 10% to 90% without condensation
Installation:	The display must not be exposed to direct sunlight or sources of heat



Dimensions and weight

Body dimensions (mm) LxHxD:	222 x 167 x 92
Frame dimensions (mm) LxHxD:	231 x 176 x 98
Weight (kg):	3.5



P-Matic MULTIPLEX CLIMA Edition

Supervision System for multiplex cinemas with Clivet heat pumps



- ▶ Central control of the climate control system
- ▶ Simple interaction, even for non specialised personnel
- ▶ Comfort and air quality are always guaranteed
- ▶ Daily programming of unit operation
- ▶ Automatic management of air diffusers and other units
- ▶ Modules for remote access and alarms transmission

P-Matic MULTIPLEX CLIMA Edition is a specialised solution for the central operation of climate control systems in multiplex cinemas:

- ▶ it integrates perfectly with Clivet rooftop units and guarantees full access to the control of the operating statuses of the unit and its operating parameters
- ▶ it allows managing air diffusers associated with the rooftop units
- ▶ it allows switching on and off other units that are not Clivet rooftop, displaying their operational status and any alarms
- ▶ it automatically handles unit operational mode (on/off, economy and washing)
- ▶ it ensures system safety by backing up data and through the uninterruptable power supply that the Personal Computer is connected to
- ▶ it contributes to wellbeing in terms of temperature, humidity and air quality for spectators and those in the foyer
- ▶ it allows management from remote station and can transmit alarms remotely by SMS or e-mail



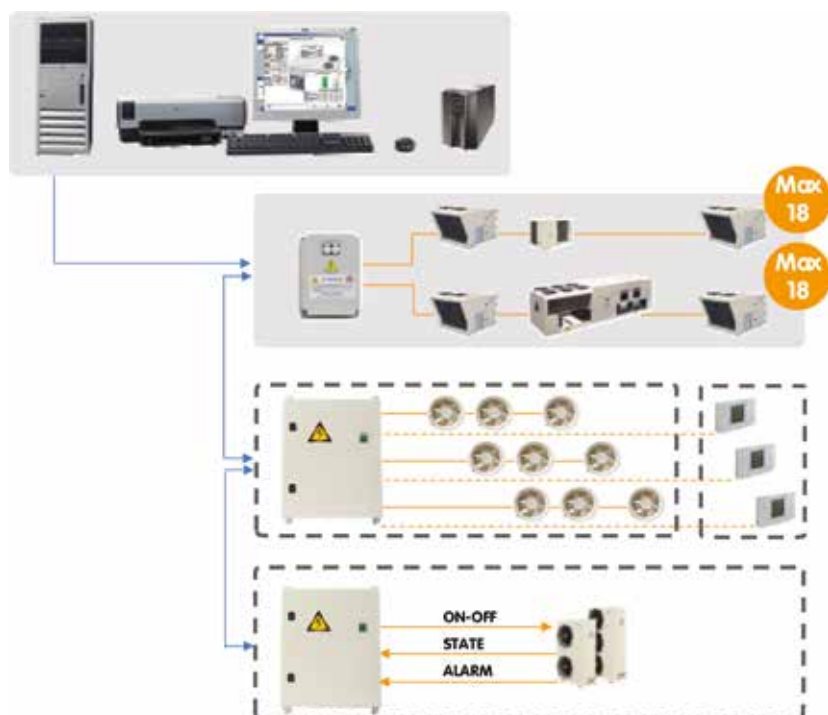
Some of the main functions of P-Matic MULTIPLEX CLIMA Edition:

- ▶ Programming the operation of the units on a daily basis, extendable to an annual basis, allows you to control each unit individually, improving operation from one zone to another
- ▶ intuitive browsing and three-dimensional graphics that make it possible, even for a non specialised operator, to interact with the units, programme their operation and verify their status in a simple manner
- ▶ Complete alarms management locally or remotely and creation of a log history file
- ▶ planning of maintenance activities
- ▶ monitoring of the main values (temperature, humidity and air quality) and graphic trends



Everything is under control

P-Matic MULTIPLEX CLIMA Edition is capable of managing Clivet units as well as other components of the climate control system



1. WORKSTATION

besides a Personal Computer, Monitor, Printer and Uninterruptable Power Supply (UPS), it includes the supervision Software customised for that specific building. It can be integrated with data transmission modules via e-mail or SMS and with modules for remote System access.

2. CLIVET UNIT MANAGEMENT

with a control panel for field installation in order to connect up to 36 Clivet units on two serial lines

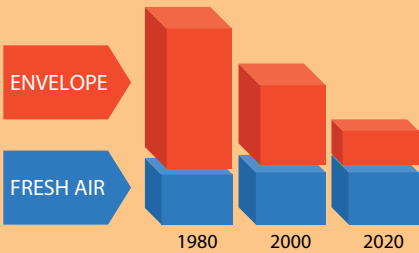
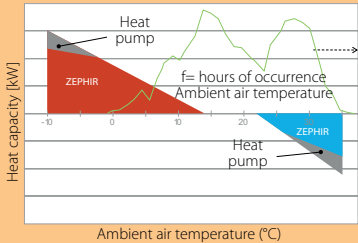
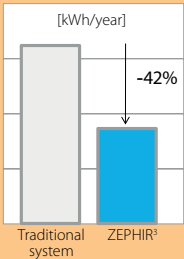
3. MANAGEMENT OF MOTORISED DIFFUSERS

with adjustment control panels for field installation used to automatically manage air diffusers, ON-OFF or modulating types, associated to each rooftop unit

4. MANAGEMENT OF OTHER UNITS

with adjustment panels for field installation for managing, by way of clean command, status and alarm contacts, units that are different from the Clivet rooftop ones

PRIMARY AIR System

	Commercial 
Airflow Capacity (A35)	ELFOFresh Large 330 ÷ 920 l/s 6 ÷ 16 kW
Products	
 Thermodynamic recovery	
 Electronic filtering	
 Free Cooling	
 Active dehumidification	
 EC fans	
 Variable airflow	
1. CENTRAL AIR RENEWAL  2. HIGH ENERGY EFFICIENCY  	

Commercial



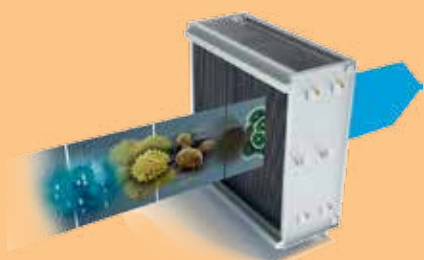
ZEPHIR³

278 ÷ 3900 l/s

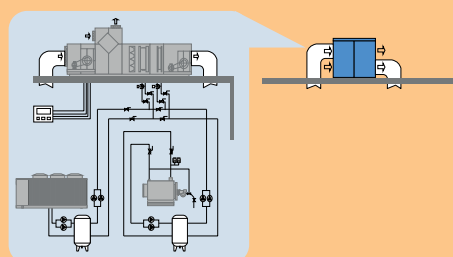
10 ÷ 96 kW



3. 99% PURIFIED AIR



4. SIMPLIFIES THE SYSTEM

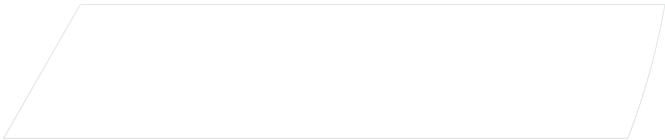
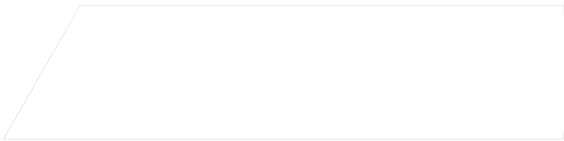
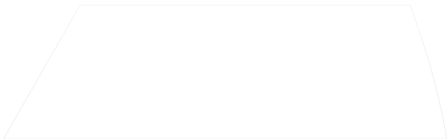




PRIMARY AIR System

System components

series	size from	to	name	page
Make-up air packaged unit, full fresh air with supply/exhaust section and thermodynamic heat recovery				
CPAN-XHE3	Size 1	Size 6	ZEPHIR ³	118
CPAN-U	17	51	ELFOFresh Large	122



Make-up air unit, full fresh air

With return/exhaust and thermodynamic heat recovery

Reversible heat pump technology

Indoor or outdoor installation

**Air flow rate from 278 to 3900 l/s
from 1000 to 14000 m³/h)**



ZEPHIR³

ZEPHIR³ encases the entire primary air system in a single packaged system.

- It extracts stale air and purifies outdoor air through the high efficiency **electronic filters**, effective against nanoparticles, PM10, bacteria and pollen.
- The **active thermodynamic recovery**, based on the reversible heat pump technology, exploits stale as thermal source. It features high energy efficiency, thanks to the **variable capacity compressor** and the electronically controlled fans with variable flow capability. This way, it also gets rid of the major consumption due to high pressure drops from passive recovery units. The capacity from the thermodynamic circuit replaces most of the power produced by heating and cooling stations, without fossil fuels and no need for fluid distribution pipework.
- ZEPHIR³ eliminates components with no useful effect, such as storage tanks, pipes and pumps, also thanks to the **free reheating** with hot gas recovery. Built-in controls allow operation with **constant supply temperature, at maximum available capacity, at high airflow**.
- As it can greatly reduce primary energy consumption, even up to 50%, ZEPHIR³ increases the property value and makes it easier to access financial support.
- It sets industrial standards as it eliminates 80% of the on site work, with amazing savings on the Total Life Cycle Cost. Being the core equipment in residential, commercial and industrial applications, it can be matched to fan coils, direct expansion and VRF systems, radiant systems and chilled beams, raising efficiency in existing buildings as well.

functions and features



Heat pump



Air cooled



Indoor installation



Outdoor installation



R-410A



Hermetic Scroll
(sizes Size 2÷Size 6)



Hermetic Rotary
(sizes Size 1)



FREE-COOLING



Active
thermodynamic
recovery



Electronically
commutated
Plug Fan



Electronic expansion
valve



Full Inverter DC

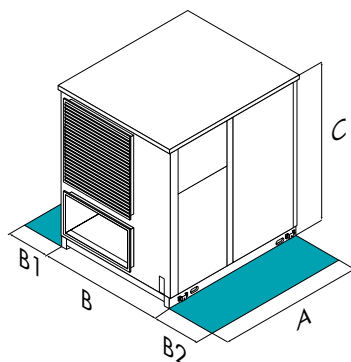


Constant Air Volume



Variable Air Volume

dimensions and clearances



Size – CPAN-XHE3		Size 1	Size 2	Size 3	Size 4	Size 5	Size 6
A - Length	mm	1895	1895	2465	2465	2465	2465
B - Width	mm	950	950	1735	1735	2025	2330
C - Height	mm	1025	1625	1810	2260	2260	2260
B1	mm	700	700	700	700	700	700
B2	mm	1200	1200	1200	1200	1200	1200
Operating weight	kg	320	450	1070	1285	1450	1670

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

technical data

Size – CPAN-XHE3			Size 1	Size 2	Size 3	Size 4	Size 5	Size 6
Operation with constant supply temperature								
Standard airflow								
Nominal air flow		l/s	361	611	1278	2000	2638	3333
Nominal air flow		m³/h	1300	2200	4600	7200	9500	12000
Max external static pressure (supply)		Pa	630	630	630	600	420	630
Max external static pressure (extraction)		Pa	630	630	630	630	540	630
Cooling								
Total cooling capacity	(1)	kW	10,6	17,5	38,7	58,4	79,0	95,9
Re-heating capacity	(1)	kW	2,74	4,23	11,0	15,2	21,7	23,4
Compressor power input	(1)	kW	2,91	4,92	11,1	15,7	20,4	23,2
EER_C	(1)	-	4,59	4,43	4,48	4,67	4,94	5,13
Heating								
Heating capacity	(2)	kW	5,93	10,0	21,0	32,9	43,4	54,9
Compressor power input	(2)	kW	0,71	1,23	2,54	4,22	5,75	8,77
COPc	(2)	-	8,38	7,45	8,28	7,80	7,55	6,26
Operation at the maximum available capacity								
Standard airflow								
Nominal air flow		l/s	361	611	1278	2000	2638	3333
Nominal air flow		m³/h	1300	2200	4600	7200	9500	12000
Max external static pressure (supply)		Pa	630	630	630	600	420	630
Max external static pressure (extraction)		Pa	630	630	630	630	540	630
Cooling								
Total cooling capacity	(3)	kW	10,6	17,5	38,7	58,4	79,0	95,9
Re-heating capacity	(3)	kW	3,26	5,52	12,5	17,7	22,9	26,1
Additional available capacity to space	(3)	kW	3,62	5,72	14,2	20,0	28,2	31,5
EER_C	(3)	-	3,25	3,18	3,10	3,31	3,45	3,68
Heating								
Heating capacity	(4)	kW	10,5	17,8	37,1	58,2	76,8	96,9
Compressor power input	(4)	kW	2,28	3,77	7,10	11,2	14,4	18,3
COPc	(4)	-	4,61	4,72	5,21	5,20	5,33	5,29
Operation with high airflow								
Maximum air flow								
Nominal air flow		l/s	528	972	1944	2556	3194	3889
Nominal air flow		m³/h	1900	3500	7000	9200	11500	14000
Max external static pressure (supply)		Pa	630	470	630	450	345	630
Max external static pressure (extraction)		Pa	630	630	630	530	400	630
Cooling								
Total cooling capacity	(5)	kW	9,20	18,2	31,9	45,1	62,0	80,6
Compressor power input	(5)	kW	1,56	3,38	4,46	6,97	13,8	17,8
EER_C	(5)	-	5,89	5,38	7,15	6,48	4,50	4,51
Heating								
Heating capacity	(6)	kW	6,00	11,1	22,1	29,1	36,3	44,2
Compressor power input	(6)	kW	0,54	1,31	2,48	3,11	3,40	5,44
COPc	(6)	-	11,1	8,46	8,94	9,36	10,7	8,14
Refrigeration circuits		Nr	1	1	2	2	2	2
No. of compressors		Nr	1	1	2	2	3	3
Type of compressors	(7)	-	ROT			Scroll		
Type of supply fan	(8)	-			RAD			
Number of supply fans		Nr	1	1	1	1	1	2
Fan diameter		mm	310	355	500	630	630	500
Type of exhaust fan		-			RAD			
Number of exhaust fans		Nr	1	1	1	1	1	2
Standard power supply		V	400/3/50					
Sound pressure level	(9)	dB(A)	53	57	61	60	62	69
Minimum air flow		l/s	361	611	1278	2000	2638	3333
Minimum air flow		m³/h	1000	1600	3300	5200	7500	9500
Maximum air flow	(10)	l/s	528	972	1944	2556	3194	3889
Maximum air flow	(10)	m³/h	1900	3500	7000	9200	11500	14000

Notes

Erp (Energy Related Products) European Directive, that includes the Commission delegated Regulation (EU) No 2016/2281 also known as Ecodesign Lot21, does not report this Product category.

DB = dry bulb; WB = wet bulb; EERc = Thermodynamic efficiency of the system in cooling; COPc = Thermodynamic efficiency of the system in heating

- (1) Outdoor air temperature: 35°C D.B./ 24°C W.B.; Exhaust air temperature: 26°C D.B. Supply air humidity ratio: 11g/kg; Supply air temperature: 24°C D.B.
- (2) Outdoor air temperature: 7°C D.B./6.0°C W.B. Exhaust air temperature: 20°C D.B./ 12°C W.B.; Supply air temperature: 20°C D.B.
- (3) Outdoor air temperature: 35°C D.B./ 24°C W.B.; Exhaust air temperature: 26°C D.B. Supply air humidity ratio: 11g/kg
- (4) Outdoor air temperature: 7°C D.B./6.0°C W.B. Exhaust air temperature: 20°C D.B./ 12°C W.B.; Supply air temperature: 28°C D.B.
- (5) Outdoor air temperature: 35°C D.B./ 24°C W.B.; Exhaust air temperature: 26°C D.B. Supply air temperature: 22°C D.B.

- (6) Outdoor air temperature: 7°C D.B./6.0°C W.B. Exhaust air temperature: 20°C D.B./ 12°C W.B.; Supply air temperature: 16°C D.B.

- (7) ROT = rotary compressor; SCROLL = scroll compressor

- (8) RAD = radial fan

- (9) The sound pressure level is referred at a distance of 1 m from the ducted unit surface operating in free field conditions. External static pressure 50 Pa. Please note that when the unit is installed in conditions different from nominal test conditions (e.g. near walls or obstacles in general), the sound levels may undergo substantial variations. Sound levels refer to unit with standard air flow rate

- (10) In case of use with high air flow only the maximum flow rate value is possible



versions and configurations

ENERGY RECOVERY:

- **RTA** Active thermodynamic recovery (Standard)

VERSION:

- **RECH** Hydronic recovery device for extended operating range
- **EPWRC** EXTRAPOWER-C (with additional chilled water heat exchanger)
- **EPWRH** EXTRAPOWER-H (with additional hot water heat exchanger, without electronic filters)

OPERATION:

- **RCM** Refrigeration circuit with capacity modulation (Standard)

RE-HEATING COIL:

- **CPHGM** Hot gas re-heating coil with capacity modulation (Standard)

UNIT INSTALLATION:

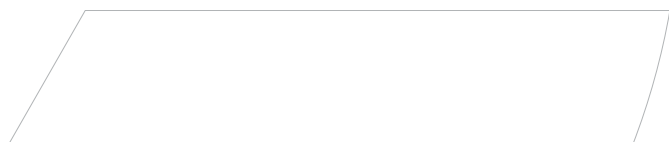
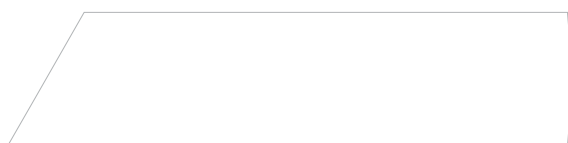
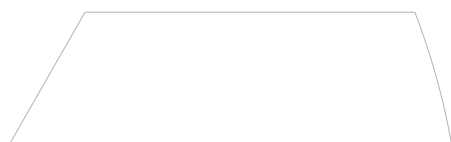
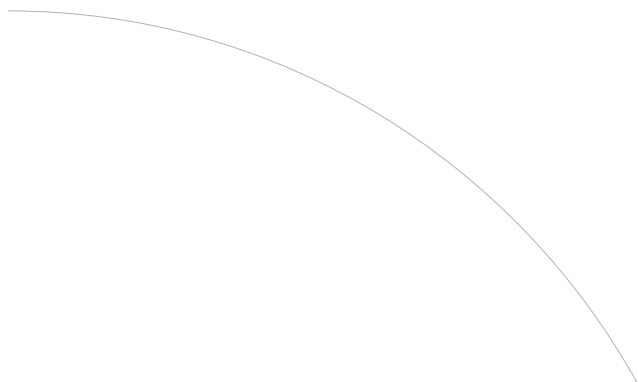
- **IO** Outdoor installation (Standard)
- **II** Indoor installation

accessories

- **CCA** Copper/aluminium exchanger on exhaust air with acrylic lining
- **CEA** Copper/aluminium exchanger on outdoor air with acrylic lining
- **PVARC** Variable air flow on supply and exhaust with CO₂ probe
- **PVARCV** Variable air flow on supply and exhaust with CO₂+VOC probe
- **PVARP** Variable flow for supply and exhaust air with supply pressure probe
- ► **MHSEX** Immersed electrodes steam humidifying module
- ► **MCHSX** Steam-powered humidifying module
- **MOB** Serial port RS485 with Modbus protocol
- **LON** Serial port RS485 with LonWorks protocol
- **BACIP** BACnet-IP serial communication module
- **VSXSA** Modification of the supply humidity ratio setpoint "X_SA" by an external signal: enable/disable via external contact or setpoint changing via Modbus and BACnet-IP protocol
- **DESM** Smoke detector
- ► **AMRX** Rubber antivibration mounts
- ► **AMRUX** Rubber antivibration mounts for unit and humidification module
- ► **RSSX** Remote supply air sensor
- **PTCO** Set up for shipping via container

Key to symbols:

- Accessories separately supplied



Make-up air unit, full fresh air

With return/exhaust and thermodynamic heat recovery

Reversible heat pump

Indoor installation

Air flow rate from 330 to 920 l/s



HID-P1 room thermostat for remote wall mounting.

Main functions:

- manual or automatic summer/winter switching
- temperature setting
- ECO mode (automatic day/night thermoregulation).

ELFOFresh Large

ELFOFresh Large units are designed to guarantee ideal air exchange rates in shops and offices.

Their main characteristics include:

- cooling, heating and humidification of outdoor air with only minimal energy consumption thanks to Free-Cooling and an exclusive Active Thermodynamic Heat Recovery that recovers heat from extracted air and returns it to the incoming fresh air;
- electronic filtration control for guaranteed purity of incoming fresh air and effective removal of airborne dust (optional).

functions and features



Heat pump



Air cooled



Indoor installation



R-410A



Hermetic Scroll
(sizes 41÷51)



Hermetic Rotary
(sizes 17÷31)

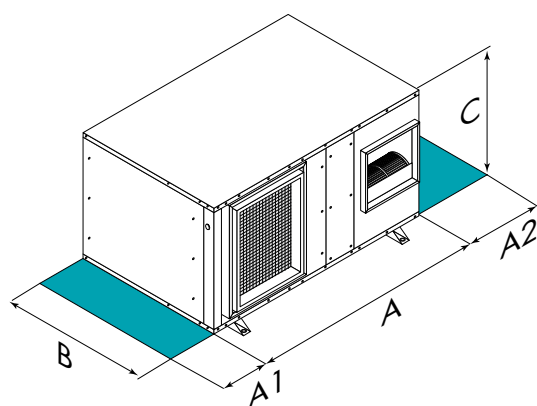


FREE-COOLING



Active
thermodynamic
recovery

dimensions and clearances



CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size – CPAN-U		17	21	25	31	41	51
A - Length	mm	1503	1503	1503	1503	1503	1503
B - Width	mm	950	950	950	950	950	950
C - Height	mm	442	442	517	517	668	668
A1	mm	900	900	900	900	900	900
A2	mm	700	700	700	700	700	700
Operating weight	kg	135	145	175	185	215	225

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

CONFIGURATION:

- **VS** Standard Version (Standard)
- **EPS** Air expulsion to the left

INTEGRATION COIL:

- **-** Additional coil: not required (Standard)
- **CH2O** Integration water coil

technical data

Size – CPAN-U			17	21	25	31	41	51
SM	► Cooling capacity	(1) kW	6,20	7,60	8,60	10,9	12,4	15,9
SM	Sensible capacity	(1) kW	5,00	5,80	7,00	8,60	9,50	12,5
SM	Compressor power input	(1) kW	1,70	2,10	2,20	2,90	2,80	3,80
SM	EER	-	3,55	3,56	3,93	3,77	4,48	4,14
SM	► Heating capacity	(2) kW	6,80	8,30	9,20	11,9	13,2	16,9
SM	Compressor power input	(2) kW	1,30	1,70	1,80	2,20	2,00	2,80
SM	COP	-	5,19	4,92	5,22	5,34	6,47	6,06
SM	Refrigeration circuits	Nr	1					
SM	No. of compressors	Nr	1					
SM	Type of compressors	(3)	Rot			Scroll		
SM	Supply airflow	l/s	330	390	470	610	690	920
SM	Type of supply fan	(4)	CFG					
SM	Number of supply fans	Nr	1					
SM	Max. static pressure supply fan	(5) Pa	190	175	300	180	270	340
SM	Exhaust airflow	l/s	300	360	440	550	640	860
SM	Number of exhaust fans	Nr	1					
SM	Max. exhaust static pressure	Pa	180	165	290	210	250	360
SM	Standard power supply	V	230/1~/50			400/3N~/50		
SM	Sound pressure level	(6) dB(A)	53	55	57	59	61	62

Notes

Erp (Energy Related Products) European Directive, that includes the Commission delegated Regulation (EU) No 2016/2281 also known as Ecodesign Lot21, does not report this Product category.

- (1) Air inlet temperature extract heat exchange coil 27°C D.B. - 19°C W.B. Outdoor air temperature 35°C B.S. - 24°C B.U.
- (2) Exhaust coil inlet air temperature 20°C B.S. - 12°C B.U. Outdoor air temperature 7°C DB - 6°C WB
- (3) SCROLL = scroll compressor; ROT = rotary compressor

(4) CFG = centrifugal fan

(5) Static pressure available on unit with electronic filters (excluding integration coil)

(6) The sound levels are referred to unit operating at full load in nominal conditions. The sound pressure level is referred at a distance of 1 m. from the ducted unit surface operating in free field conditions. External static pressure 50 Pa.

SM Standard

accessories

- **FES** Electronic filters
- **FEQ4** Class G4 air filters on outdoor and exhaust air
- **3WVM** Modulating three-way valve
- **HSE3** 3 kg/h immersed electrodes steam humidifier (sizes 17÷21)
- **HSE5** 5 kg/h immersed electrodes steam humidifier (sizes 25÷31)
- **HSE8** 8 kg/h immersed electrodes steam humidifier (sizes 41÷51)
- **PSAF** Differential pressure switch for dirty air filters
- **SP1** RS485 remote communication serial port

- **EHP9** 2 kW preheating electric heaters (sizes 17÷21)
- **EHP7** 3 kW preheating electric heaters (sizes 25÷31)
- **EHP14** 4.5 kW preheating electric heaters (sizes 41÷51)
- **RCMRX** Remote control via microprocessor control
- **PBLC1X** Service keypad (cable from 1,5 metres)
- **PBLC2X** Local control portable keypad with cable 20 metres
- **PM** Phase monitor (sizes 25÷51)

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

WLHP System

	Low and medium attendance applications				
					
	VERSATEMP EQV-X	VERSATEMP EVH-XS	VERSATEMP EVH-X	VERSATEMP EVH-X Space	VERSATEMP CHV-X
Capacities (A27/W35)	2,1 ÷ 4,1 kW	2,1 ÷ 2,8 kW	2,3 ÷ 4,2 kW	8 ÷ 31 kW	11 ÷ 76 kW
ErP compliance (heat pumps only)					
 Vertical cased					
 Vertical uncased					
 Horizontal uncased					
 Outdoor installation					
 Heating					
 Cooling					
 Thermodynamic energy recovery					

Medium and high attendance applications



CLIVETPack²
CRH-XHE2

51 ÷ 392 kW





WLHP System

System components

series	size from	to	name	page
Packaged heat pump - water source - internal vertical installation, with or without casing				
EQV-X	5	21	VERSATEMP	128
Packaged heat pump - water source - internal, horizontal, ductable installation				
EVH-XS	005.1	007.1	VERSATEMP	130
EVH-X	5	17	VERSATEMP	132
EVH SPACE	21	101	VERSATEMP	134
CH	21	101	VERSATEMP	136
Packaged heat pump - water source - internal, vertical, ductable installation				
CHV-X	31	222	VERSATEMP	138
Packaged heat pump - water source - roof top for medium attendance applications				
CRH-XHE2	14.2	110.4	CLIVETPack ²	140



Direct expansion high efficiency packaged air conditioner

Reversible heat pump

Water cooled

Vertical indoor installation either cased or uncased

Capacity from 2,1 to 4,1 kW



User interface THTUNE (optional) available:

- built-in
- wall mounted
- wall mounted on a flush mounting box.

Some of the main features are:

- unit on/off
- temperature measurement with built-in probe
- main unit information display
- manual setting of the operating mode (heat/cool) and/or of the setpoint
- hourly and weekly programming of on/off and of the standard/economic set point
- manually, or automatically, managing the fan speed, depending on the distance from the set-point.



ErP compliant

functions and features



Heat pump



Water cooled



Vertical: cased



Vertical: uncased



R-410A

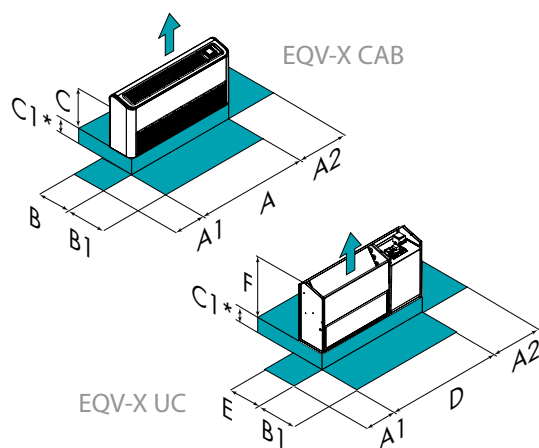


Hermetic Rotary



Electronic expansion valve

dimensions and clearances



Size - EQV-X		5	7	9	15	17	21
A - Length	mm	1050	1200	1200	1350	1350	1350
B - Width	mm	240	240	240	240	240	240
C - Height	mm	520	520	520	520	520	520
D - Length	mm	945	1095	1095	1245	1245	1245
E - Width	mm	225	225	225	225	225	225
F - Height	mm	490	490	490	490	490	490
A1	mm	200	200	200	200	200	200
A2	mm	100	100	100	100	100	100
B1	mm	500	500	500	500	500	500
C1	mm	100	100	100	100	100	100
Operating weight	kg	55	61	61	64	64	68

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

(*) For units with air intake from below only

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

VERSATEMP

VERSATEMP EQV-X is the high efficiency water source **packaged air conditioner** that automatically either heats or cools the ambient throughout the year, using the **water as source**.

Thanks to the rotary compressor, to the electronic expansion valve, to the plate heat exchanger and to the multispeed centrifugal fan, **VERSATEMP EQV-X** stands out for its **high efficiency in all the operating conditions** and for its **reliability**. The installation is also simplified by the **specific hydraulic pipe** works, supplied already installed and tested, which are available for different solutions.

The **VERSATEMP EQV-X design** can be elegantly added to different settings both in its cased and in its uncased version, the latter being available to be integrated in the furnishing. The **low noise** operation is ensured by the insulation of the compressor compartment, by the accurate balancing of the fans and by the antivibration devices provided for all moving parts.

versions and configurations

CONFIGURATION:

- **UC** Uncased version (without casing) (Standard)
- **CAB** Configuration with fairing for cased applications

RETURN:

- **R3** Floor air inlet (Standard)
- **RF** Front air inlet

technical data

Size – EQV-X			5	7	9	15	17	21
► Cooling capacity	(1)	kW	2,08	2,39	2,88	3,38	3,75	4,11
Sensible capacity	(1)	kW	1,47	1,69	2,12	2,55	2,64	3,05
Compressor power input	(1)	kW	0,43	0,56	0,61	0,71	0,77	0,84
Total power input	(1)	kW	0,49	0,62	0,67	0,81	0,87	0,96
EER	(1)	-	4,19	3,78	4,20	4,09	4,22	4,20
► Heating capacity	(2)	kW	2,54	3,05	3,55	4,29	4,78	5,10
Compressor power input	(2)	kW	0,47	0,63	0,70	0,77	0,92	1,04
Total power input	(2)	kW	0,53	0,69	0,76	0,87	1,02	1,16
COP	(2)	-	4,91	4,49	4,71	5,05	4,72	4,49
No. of compressors	Nr		1					
Type of compressors	(3)	-	ROT					
Supply airflow		l/s	106	128	126	208	208	231
Type of supply fan	(4)	-	CFG					
Water flow rate (Source Side)	(5)	l/s	0,12	0,14	0,17	0,19	0,21	0,24
Standard power supply	V		230/1/50					
Sound pressure level	(6)	dB(A)	41	41	41	45	45	47
Directive ErP (Energy Related Products)								
SEER	(7)	-	3,93	4,13	4,08	4,02	3,95	4,22
SCOP	(7)	-	3,58	3,96	3,79	3,82	3,63	3,97

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Values read in compliance with EN14511:2013 and including the required system fan motor and water pump capacity for overcoming pressure drops inside the unit. DB = dry bulb; WB = wet bulb

- (1) Ambient air 27°C D.B./19°C W.B. Exchanger water temperature 30°C / 35°C
- (2) Ambient air at 20°C D.B./15°C W.B. Water temperature at plate exchanger 20°C input; The water temperature at the exchanger output is read in relation to the flow of water being chilled.
- (3) ROT = rotary compressor

- (4) CFG = centrifugal fan
- (5) Water flow calculated in relation to the performances in cooling
- (6) The sound levels are referred to unit operating at a full load in nominal conditions. The sound pressure level is referred at a distance of 1m. from the external unit surface, with fairing, fitted to a wall. Please note that when the unit is installed in conditions other than nominal test conditions /for example near walls or obstacles in general) the sound levels may undergo substantial variation. Measurements are made in accordance to the UNI EN ISO 9614-2, with units installed over two sound reflective surfaces.
- (7) Data calculated according to the EN 14825:2016 Regulation

accessories

- **CONT** Electronic room control with display, installed in a visible position on the unit with fairing
- **CONTX** Electronic room control with display, for installation on the uncased unit
- **CWMX** Electronic room control with display, for wall installation
- **CIWMX** Electronic room control with display, for wall installation in built-in box
- **MIPC** Hydraulic pipework arrangement for loop with constant flow rate with manual valves
- **MIPV** Hydraulic pipework arrangement for loop with variable flow rate with 2 way ON-OFF valve
- **REQV** Constant flow retrofit water connections for EQV,VV,VM units
- **V2MODX** 2-way modulating valve for disposable water system
- **KFVMX** Two ways modulating valve fixing kit for disposable water system
- **DAOJX** Air supply duct with flexible connection
- **GOJX** Air supply grille with flexible connection
- **FCVBX** Water balancing valve
- **PFHCX** 200 mm flexible pipes for the connection to the water circuit + drop conduit
- **PFHC1X** 500 mm flexible pipes for the connection to the water circuit + drop conduit
- **IFWX** Steel mesh strainer on the water side
- **CDPX** Condensate drain pump
- **CDPA** Condensate drain pump, built-in
- **FXVFX** Painted plinths for floor fixing
- **FXVFHX** Floor mounted painted feet kit with front grille
- **FXPFX** Zinc-coated plinths for floor fixing on uncased unit
- **FXPMX** Increased zinc-coated plinths for floor fixing on uncased unit
- **BACKV** Painted rear panel for cased version
- **MOBA** RS485 serial port with Modbus protocol, built-in
- **MOBX** Modbus RS485 serial port kit
- **CMSLWX** LonWorks serial communication module
- **BACX** BACnet serial communication module
- **CSVX** Couple of manual shut-off valves

Key to symbols:

- Accessories separately supplied

Direct expansion high efficiency air conditioner

Reversible heat pump

Water cooled

Horizontal indoor installation uncased

Capacity from 2.1 to 2.8 kW

VERSATEMP



VERSATEMP EVH-XS is the **high efficiency packaged air-conditioner** that automatically heats or cools rooms throughout the whole year, using **water as source**.

Its strength is the **reduced height** directly comparable with a horizontal fan coil, ideal for installation in offices, hotel rooms or for applications with stringent architectural constraints.

Thanks to its rotating compressor, its mechanical expansion valve, its plate exchanger and its multi-speed centrifugal fan with brushless EC motor, this unit stands out due to its **high level of efficiency in all operating conditions** and its **great reliability**.

The operating silence is ensured by the particular sound-proofing of the compressor compartment, by the accurate balancing of the fans and by the standard anti-vibration devices for all moving parts.



ErP compliant

functions and features



Heat pump



Water cooled



Horizontal: uncased

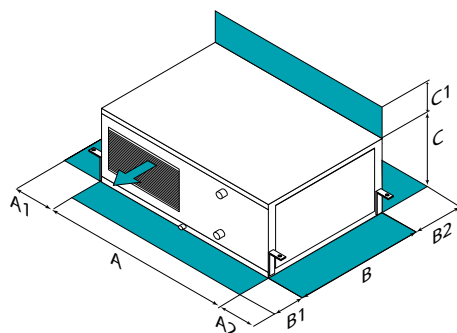


R-410A



Hermetic Rotary

dimensions and clearances



Size – EVH-XS		005.1	007.1
A - Length	mm	1018	1018
B - Width	mm	594	594
C - Height	mm	254	254
A1	mm	150	150
A2	mm	500	500
B1	mm	300	300
B2	mm	500	500
C1	mm	100	100
Operating weight	kg	59	60

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

technical data

Size – EVH-XS		005.1	007.1
▶ Cooling capacity	kW	2,06	2,84
Sensible capacity	kW	1,75	1,83
Compressor power input	kW	0,48	0,60
Total power input	kW	0,53	0,67
EER	-	4,29	4,73
▶ Heating capacity	kW	2,43	3,37
Compressor power input	kW	0,60	0,82
Total power input	kW	0,65	0,87
COP	-	4,05	4,11
No. of compressors	Nr	1	1
Type of compressors	-		ROT
Supply airflow	l/s	111	139
Type of supply fan	-		CFG
Number of supply fans	Nr	1	1
Max. static pressure supply fan	Pa	50	50
Standard power supply	V	230/1/50	
Sound pressure level	dB(A)	42	45
Directive ErP (Energy Related Products)			
SEER (1)	-	3,26	4,20
SCOP (1)	-	3,10	3,99

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

(1) Data calculated according to the EN 14825:2016 Regulation

accessories

- **CWMX** Electronic room control with display, for wall installation
- **CIWMX** Electronic room control with display, for wall installation in built-in box
- **V2MODX** 2-way modulating valve for disposable water system
- **V2ONX** 2-way ON-OFF valve for variable flow-rate loop
- **AMMX** Spring antivibration mounts
- **FCVBX** Water balancing valve
- **VIFWX** Steel mesh strainer and hand shut-off valve
- **PFHCX** 200 mm flexible pipes for the connection to the water circuit + drop conduit
- **PFHC1X** 500 mm flexible pipes for the connection to the water circuit + drop conduit
- **CDPX** Condensate drain pump
- **MOBA** RS485 serial port with Modbus protocol, built-in
- **MOBX** Modbus RS485 serial port kit
- **CMSLWX** LonWorks serial communication module
- **BACX** BACnet serial communication module
- **VIMANX** Hand shut-off valve
- **BPH2OX** Shut-off valve for by-pass (water side)

Key to symbols:

- Accessories separately supplied

Direct expansion high efficiency air conditioner

Reversible heat pump

Water cooled

Horizontal indoor installation uncased

Capacity from 2,3 to 4,2 kW

VERSATEMP



VERSATEMP EVH-X is the **high efficiency packaged air-conditioner** that automatically heats or cools rooms throughout the whole year, using **water as source**.

Thanks to its rotating compressor, its electronic expansion valve, its plate exchanger and its multi-speed centrifugal fan, this unit stands out due to its **high level of efficiency in all operating conditions** and its **great reliability**.

The operating silence is ensured by the particular sound-proofing of the compressor compartment, by the accurate balancing of the fans and by the standard anti-vibration devices for all moving parts.



ErP compliant

functions and features



Heat pump



Water cooled



Horizontal: uncased



R-410A

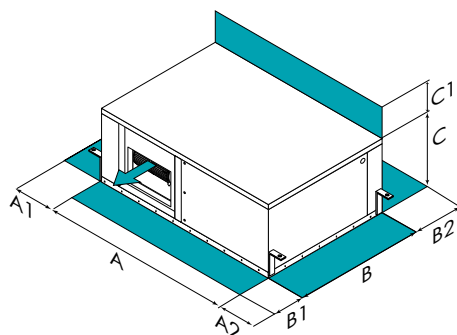


Hermetic Rotary



Electronic expansion valve

dimensions and clearances



Size - EVH-X		5	7	9	11	15	17
A - Length	mm	1034	1034	1034	1034	1034	1034
B - Width	mm	513	513	513	513	513	513
C - Height	mm	361	361	361	386	386	386
A1	mm	100	100	100	100	100	100
A2	mm	350	350	350	350	350	350
B1	mm	350	350	350	350	350	350
B2	mm	350	350	350	350	350	350
C1	mm	100	100	100	100	100	100
Operating weight	kg	71	73	74	77	81	82

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

technical data

Size – EVH-X		5	7	9	11	15	17
A27/19 W30							
▶ Cooling capacity	(1) kW	2,26	2,83	3,16	3,45	3,87	4,16
Sensible cooling capacity	kW	1,91	2,41	2,75	2,93	3,22	3,50
Total power input	kW	0,54	0,66	0,74	0,77	0,85	0,92
EER (EN 14511:2013)	-	4,22	4,27	4,28	4,50	4,54	4,51
A20 W20							
▶ Heating capacity	(2) kW	2,76	3,38	3,85	4,15	4,50	4,92
Total power input	kW	0,55	0,65	0,77	0,82	0,94	1,06
COP (EN 14511:2013)	-	4,99	5,20	4,97	5,05	4,81	4,66
A20 W15							
▶ Heating capacity	(3) kW	2,46	2,97	3,33	3,66	3,98	4,42
Total power input	kW	0,55	0,63	0,72	0,80	0,89	1,02
COP (EN 14511:2013)	-	4,42	4,60	4,47	4,59	4,40	4,30
No. of compressors	Nr	1	1	1	1	1	1
Type of compressors	(4) -	ROT					
Supply airflow	l/s	148	148	170	190	222	222
Type of supply fan	(5) -	CFG					
Number of supply fans	Nr	1	1	1	1	1	1
Max. static pressure supply fan	Pa	40	40	40	40	40	40
Water flow rate (Source Side)	(6) l/s	0,13	0,16	0,18	0,20	0,22	0,24
Standard power supply	V	230/1/50					
Sound pressure level	(7) dB(A)	33	33	34	34	34	35
Directive ErP (Energy Related Products)							
SEER	(8) -	3,75	4,06	3,90	4,10	4,05	4,18
SCOP	(8) -	3,41	3,90	3,63	3,77	3,97	4,05

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Values read in compliance with EN14511:2013 and including the required system fan motor and water pump capacity for overcoming pressure drops inside the unit.

- (1) Ambient air 27°C D.B./19°C W.B. Exchanger water temperature 30°C / 35°C
- (2) Ambient air 20°C D.B. Exchanger inlet water temperature 20°C. The water temperature at the exchanger output is read in relation to the flow of water being chilled.
- (3) Ambient air 20°C D.B. Exchanger inlet water temperature 15°C; The water temperature at the exchanger output is read in relation to the flow of water being chilled.
- (4) ROT = rotary compressor

- (5) CFG = centrifugal fan
- (6) Water flow calculated in relation to the performances in cooling
- (7) Sound levels refer to the unit at full load installed on the ceiling, ducted, with minimum, standard and maximum air flow rate of the fan. Available static pressure 40 Pa. In accordance with the UNI-EN ISO 3744 regulation, the average sound pressure level refers to a distance of 1 m from the outer surface of a ducted unit installed on the ceiling. Measurements are made in accordance to the UNI EN ISO 9614-2, with units installed over two sound reflective surfaces.
- (8) Data calculated according to the EN 14825:2016 Regulation

accessories

- **CWMX** Electronic room control with display, for wall installation
- **CIWMX** Electronic room control with display, for wall installation in built-in box
- **V2MODX** 2-way modulating valve for disposable water system
- **V2ONX** 2-way ON-OFF valve for variable flow-rate loop
- **TPF** Filter-holder frame with lateral and bottom exhaust
- **AMMX** Spring antivibration mounts
- **DAOJX** Air supply duct with flexible connection
- **DAIX** Return air duct
- **DAOIX** Air discharge and intake duct
- **FCVBX** Water balancing valve
- **VIFWX** Steel mesh strainer and hand shut-off valve

- **PFHCX** 200 mm flexible pipes for the connection to the water circuit + drop conduit
- **PFHC1X** 500 mm flexible pipes for the connection to the water circuit + drop conduit
- **CDPX** Condensate drain pump
- **MOBA** RS485 serial port with Modbus protocol, built-in
- **MOBX** Modbus RS485 serial port kit
- **CMSLWX** LonWorks serial communication module
- **BACX** BACnet serial communication module
- **VIMANX** Hand shut-off valve
- **BPH20X** Shut-off valve for by-pass (water side)

Key to symbols:

- Accessories separately supplied

Packaged air-conditioning unit

Reversible heat pump
Water cooled
Horizontal indoor installation
Ductable
Capacity from 8 to 31,5 kW



HID-P1 room thermostat for remote wall mounting.
Main functions:
- manual or automatic summer/winter switching
- temperature setting
- ECO mode (automatic day/night thermoregulation).



functions and features



Heat pump



Water cooled



Horizontal: uncased

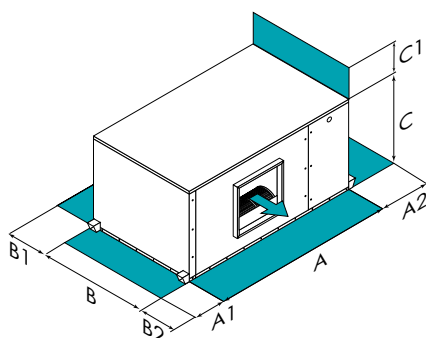


R-407C



Hermetic Scroll

dimensions and clearances



VERSATEMP

High efficiency, low noise, single compressor **EVHSpace** units are available in 10 sizes, backed up by a complete range of accessories.

They are ideal for air conditioning in shops, shopping centres and open space offices, etc. and can be installed either in a closed ring (WLHP) configuration or, more commonly, in a lost water configuration.

Thanks to their compact size and easy maintenance, they are the perfect choice for installation above false ceilings.

Air supply is ducted while air return can be either ducted or direct from the surrounding environment.

Because they can function in heating and cooling modes, these units ensure real all-year-round comfort.

A microprocessor control system provides important additional control and adjustment functions, all of which can be controlled by a room controller or B.M.S. over a serial communication line.

Size – EVH SPACE		21	25	31	41	51	61	71	81	91	101
A - Length	mm	1100	1100	1100	1100	1375	1375	1375	1730	1730	1730
B - Width	mm	710	710	710	710	750	750	750	810	810	810
C - Height	mm	500	500	500	500	600	600	600	700	700	700
A1	mm	10	10	10	10	10	10	10	10	10	10
A2	mm	300	300	300	300	300	300	300	300	300	300
B1	mm	300	300	300	300	300	300	300	300	300	300
B2	mm	500	500	500	500	500	500	500	500	500	500
C1	mm	10	10	10	10	10	10	10	10	10	10
Operating weight	kg	130	140	155	170	210	217	225	295	302	310

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

APPLICATION:

- **W** Water Loop Heat Pump application (Standard)
- **PW** Once-through water application

technical data

Size – EVH SPACE			21	25	31	41	51	61	71	81	91	101
► Cooling capacity	(1)	kW	8,04	8,49	9,31	13,3	17,2	19,5	21,6	23,5	27,8	31,5
Sensible capacity	(1)	kW	6,36	7,22	7,76	10,1	13,8	14,1	17,4	17,9	22,9	23,7
Compressor power input	(1)	kW	1,59	2,13	2,40	2,68	3,42	4,10	4,59	5,32	6,81	7,32
EER	(1)	-	5,06	3,99	3,88	4,96	5,03	4,76	4,71	4,42	4,08	4,30
► Heating capacity	(2)	kW	8,17	10,1	11,9	14,3	17,0	20,0	22,9	25,3	31,9	37,3
Compressor power input	(2)	kW	1,80	2,29	2,72	3,15	3,57	4,37	4,99	5,60	7,53	8,48
COP	(2)	-	4,54	4,41	4,38	4,54	4,76	4,58	4,59	4,52	4,24	4,40
Refrigeration circuits	Nr		1	1	1	1	1	1	1	1	1	1
No. of compressors	Nr		1	1	1	1	1	1	1	1	1	1
Type of compressors	-		SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
Supply airflow		l/s	555	666	750	777	1166	1222	1286	1527	1722	1861
Type of supply fan	(3)	-	ELV	ELV	ELV	ELV	ELV	ELV	ELV	ELV	ELV	ELV
Number of supply fans	Nr		1	1	1	1	1	1	1	1	1	1
Max. static pressure supply fan	(4)	Pa	120	120	100	100	140	140	140	100	100	100
Water flow rate (Source Side)		l/s	0,40	0,50	0,50	0,70	0,80	0,90	1,00	1,20	1,40	1,60
Standard power supply		V	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50	400/3/50	400/3/50
Sound pressure level	(5)	dB(A)	53	54	54	54	55	54	55	56	56	57
Directive ErP (Energy Related Products)												
SEER	(6)	-	3,91	3,30	3,26	4,37	4,01	3,96	3,92	3,36	3,30	3,55
SCOP	(6)	-	3,31	3,37	3,2	3,53	3,81	3,45	3,53	3,63	3,54	3,52

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

- (1) Ambient air 26°C DB / 19,5°C WB; Exchanger inlet water 29°C; Exchanger water outlet 35°C
- (2) Ambient temperature 20°C; Exchanger water outlet 10°C
- (3) ELV=electric fan

- (4) Max available static pressure with standard electrofan at min speed and nominal air flow; According to the variability of the voltage also the value of capacity and head pressure
- (5) Sound levels refer to units with full load under nominal test conditions. The sound pressure is measured at 1 m from the external surface of the unit in open field conditions.
- (6) Data calculated according to the EN 14825:2016 Regulation

accessories

- **PSAF** Differential pressure switch for dirty air filters
- **WMVX** Water side modulating valve
- **IVWX** Water side motorized valve
- **VHPRE** Set up for motorized valve
- **IHMAX** Manual shut-off valve
- **BPH20X** Shut-off valve for by-pass (water side)

Key to symbols:

- Accessories separately supplied

- ► **IFWX** Steel mesh strainer on the water side
- **PTAI** Return air temperature probe
- **CLSE** Free contacts for alarm
- **SP1** RS485 remote communication serial port
- **ELINV** Electric fan controlled by inverter (sizes 81÷101)
- ► **BACNX** BACnet serial communication module

Packaged air-conditioning unit

Reversible heat pump
Water cooled
Horizontal indoor installation
Ductable

Capacity from 8 to 33 kW



HID-P1 room thermostat for remote wall mounting.

Main functions:

- manual or automatic summer/winter switching
- temperature setting
- ECO mode (automatic day/night thermoregulation).

**functions and features**

Heat pump



Water cooled



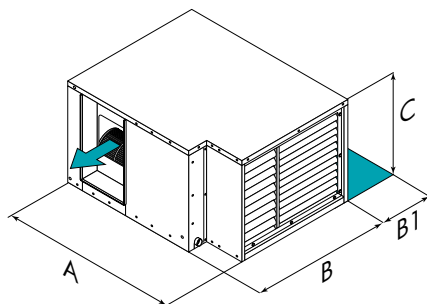
Horizontal: uncased



R-407C



Hermetic Scroll

dimensions and clearances

Size – CH		21	25	31	41	51	61	71	81	91	101
A - Length	mm	1150	1150	1385	1385	1385	1458	1458	1458	1458	1458
B - Width	mm	820	820	1002	1002	1002	1164	1164	1375	1375	1375
C - Height	mm	520	520	635	635	635	635	635	760	760	760
B1	mm	500	500	500	500	500	500	500	500	500	500
Operating weight	kg	132	140	200	212	215	250	260	290	295	305

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

VERSATEMP

The single-compressor **CH** units come in 10 sizes with a complete set of accessories and are distinguished by their high efficiency and low noise.

They are intended for air-conditioning shops, shopping areas in general, openspace offices, etc. They are **applied in closed loop (WLHP)** or, more generally, in open loop **water systems**.

They are ceiling-mounted, either exposed or inserted inside a suspended ceiling. Installation is simple also thanks to the reduced size and maintenance is easy to carry out thanks to the full accessibility of all the parts from just one side. The conditioned air is distributed via ductwork, while the air intake can be either direct from the room or ducted.

The automatic mode of operation ensures comfort throughout the year, whether heating or cooling, without seasonal switching over. Microprocessor regulation also allows other important functions of control and regulation to be carried out that may all be transferred to a remote unit or BMS through a serial communication line.

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

APPLICATION:

- **W** Water Loop Heat Pump application (Standard)
- **PW** Once-through water application

► **G**

Geothermal application

technical data

Size – CH			21	25	31	41	51	61	71	81	91	101
► Cooling capacity	(1)	kW	8,10	9,60	11,3	14,2	17,0	20,4	22,4	26,4	28,8	32,7
Sensible capacity	(1)	kW	6,10	6,60	7,60	9,40	11,0	13,2	14,3	16,9	18,5	20,4
Compressor power input	(1)	kW	1,70	2,00	2,40	3,00	4,10	4,30	4,70	5,80	6,60	7,10
► Heating capacity	(2)	kW	9,20	10,7	13,2	16,0	19,2	23,2	25,8	30,6	33,7	38,9
Compressor power input		kW	1,70	2,10	2,40	2,90	3,70	4,50	5,10	6,00	6,80	8,10
Refrigeration circuits		Nr	1	1	1	1	1	1	1	1	1	1
No. of compressors		Nr	1	1	1	1	1	1	1	1	1	1
Type of compressors		-	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Supply airflow		l/s	486	583	694	847	1028	1236	1389	1556	1722	1944
Type of supply fan	(3)	-	CFG	CFG	CFG	CFG	CFG	CFG	CFG	CFG	CFG	CFG
Number of supply fans		Nr	1	1	1	1	1	1	1	1	1	1
Max. static pressure supply fan		Pa	150	150	150	150	150	150	150	150	150	150
Water flow rate (Source Side)		l/s	0,40	0,47	0,55	0,69	0,85	1,00	1,10	1,29	1,42	1,60
Standard power supply		V	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Sound pressure level	(4)	dB(A)	55	57	55	58	61	57	59	56	58	59
Directive ErP (Energy Related Products)												
SEER	(5)	-	3,57	3,86	4,15	3,94	3,29	3,76	3,72	3,69	3,58	3,88
SCOP	(5)	-	3,36	3,62	4,49	4,07	3,82	3,98	3,77	3,86	3,75	3,74

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

- (1) Ambient temperature 27°C/19,5 WB; Exchanger inlet water 29°C; Exchanger water outlet 35°C
- (2) Ambient temperature 20°C; Exchanger water outlet 10°C

(3) CFG = centrifugal fan

(4) The sound levels refer to the unit at full load, in the rated test conditions.

The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field.

(5) Data calculated according to the EN 14825:2016 Regulation

accessories

- **MMFM** Larger outlet electric fan motor
- **PSAF** Differential pressure switch for dirty air filters
- **IVW** Water side motorized valve
- **IVMW** Water side modulating valve
- **VHPRE** Set up for motorized valve
- **IHMA** Manual shut-off valve
- **BPH20X** Shut-off valve for by-pass (water side)
- **IFW** Steel mesh strainer on the water side
- **PTAI** Return air temperature probe
- **SP1** RS485 remote communication serial port
- **CLSE** Free contacts for alarm
- **ACIE** Internal exchanger anti-ice protection heater
- **PBLC1X** Service keypad (cable from 1,5 metres)
- **PBLC2X** Local control portable keypad with cable 20 metres
- **PRMX** Air discharge plenum

Key to symbols:

- Accessories separately supplied

Packaged air-conditioning unit

Reversible heat pump
Water cooled
Vertical indoor installation
Ductable

Capacity from 11 to 76 kW



THTUNE command and control keypad

Main functions:

- temperature and humidity measurement through built-in probes
- unit on/off
- unit main information
- ventilation-only setting
- daily/weekly programming
- temperature set-point modification
- humidity set-point modification



VERSATEMP

The **packaged air-conditioning unit VERSATEMP CHV-X** is a **vertical indoor unit** that automatically heats or cools all year round using the **water as source**.

Thanks to the Scroll compressors, to the electronic expansion valve, to the electronically controlled fan this unit stands out for its **high efficiency in every operating condition** and for its **reliability**. Also the installation is easy thanks to the **specific** plumbing assembly available for the different solutions (optional), and supplied pre-installed and tested.

The numerous combinations of versions and accessories make the VERSATEMP CHV-X easy to install in **technical rooms, service areas** like closets or warehouses and **directly in the area** to be air conditioned.

functions and features



Heat pump



Water cooled



Indoor installation



R-410A



Hermetic Scroll



Electronically commutated Plug Fan

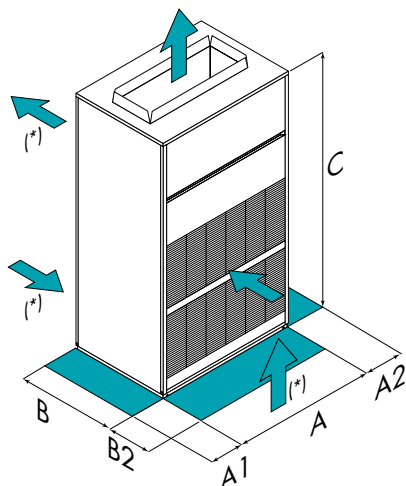


Electronic expansion valve



Constant Air Volume

dimensions and clearances



Size – CHV-X		31	41	51	61	71	81	82	102	122	162	182	222
A - Length	mm	850	850	850	1050	1050	1050	1050	1050	1450	1450	1850	1850
B - Width	mm	510	510	510	510	510	510	780	780	780	780	780	780
C - Height	mm	1705	1705	1705	1705	1705	1705	2000	2000	2000	2000	2000	2000
A1	mm	400	400	400	400	400	400	400	400	400	400	400	400
A2	mm	400	400	400	400	400	400	400	400	400	400	400	400
B2	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Operating weight	kg	178	179	188	207	208	210	310	315	400	410	490	500

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

(*) Optional

versions and configurations

AIRFLOW:

- **SM** Standard air outlet flow-rate (Standard)
- **RM** Reduced air outlet flow-rate

► HM

Supply air flow rate High

technical data

Size – CHV-X			31	41	51	61	71	81	82	102	122	162	182	222
▶ Cooling capacity	(1)	kW	10,8	12,4	16,0	17,5	20,0	24,8	34,3	39,3	48,1	56,3	66,2	75,7
Sensible capacity	(1)	kW	8,30	9,80	12,6	13,8	15,0	18,4	27,7	30,8	38,5	45,8	53,3	58,8
Compressor power input	(1)	kW	1,97	2,30	3,09	3,63	3,83	4,96	6,39	7,44	9,18	10,2	12,2	14,6
EER	(1)	-	5,48	5,40	5,18	4,82	5,22	5,00	5,37	5,28	5,24	5,52	5,43	5,18
▶ Heating capacity	(2)	kW	12,2	14,0	18,6	20,6	23,1	28,6	37,7	43,4	52,0	62,0	72,2	83,9
Compressor power input	(2)	kW	2,36	2,70	3,60	4,47	5,08	6,26	7,13	8,35	9,39	11,3	13,2	15,9
COP	(2)	-	5,15	5,18	5,18	4,62	4,55	4,57	5,29	5,20	5,54	5,49	5,47	5,28
No. of compressors	Nr		1	1	1	1	1	1	2	2	2	2	2	2
Type of compressors	(3)	-	Scroll											
Supply airflow	l/s		569	778	889	1056	1167	1250	1944	2222	2778	3194	3611	4167
Type of supply fan	(4)	-	RAD											
Number of supply fans	Nr		1	1	1	1	1	1	1	1	2	2	2	2
Max. static pressure supply fan	(5)	Pa	700	460	275	365	240	120	450	340	240	540	510	400
Standard power supply	V		400/3~/50											
Sound pressure level	dB(A)		53	55	57	59	61	63	60	63	59	61	63	65
Directive ErP (Energy Related Products)														
SEER - AVERAGE Climate	(6)	-	3,61	3,60	3,59	3,36	3,68	3,58	4,58	4,24	4,64	4,56	4,74	4,41
SCOP - AVERAGE Climate	(6)	-	3,42	3,50	3,44	3,12	3,02	3,09	4,20	4,10	4,40	4,33	4,34	4,16

Notes

- (1) Ambient air 27°C D.B./19°C W.B. Exchanger water temperature 30°C / 35°C
- (2) Ambient air at 20°C D.B./15°C W.B. Water temperature at plate exchanger input 15°C; The water temperature at the exchanger output is read in relation to the flow of water being chilled.
- (3) SCROLL = scroll compressor
- (4) RAD = radial fan
- (5) Net outside static pressure to win the outlet and intake onboard pressure drops

- (6) Data calculated according to the EN 14825:2016 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

- **EVE** Electronic expansion valves
- **R3** Floor air inlet (sizes 82÷222)
- **R4** Rear air inlet
- **MP** Rear supply air (sizes 82÷222)
- **PF500X** Front air supply plenum H=500mm
- **PO3X** Air supply plenum on three sides (sizes 31÷81)
- **PCOSM** Constant supply airflow
- **PSAF** Differential pressure switch for dirty air filters
- **MIPC** Hydraulic pipework arrangement for loop with constant flow rate with manual valves
- **MIPV** Hydraulic pipework arrangement for loop with variable flow rate with 2 way ON-OFF valve
- **MIPM** Hydraulic pipework arrangement for loop with disposable water system with 2-way modulating valve
- **IFWX** Steel mesh strainer on the water side
- **ACIS** Antifreeze heater protection on the water side exchanger
- **CHW2** Two-rows hot water coil
- **3WVM** Modulating three-way valve (sizes 82÷222)
- **3WVPX** Modulating three-way valve (sizes 31÷81)
- **EH09** 4,5 kW electric heaters (sizes 31÷81)
- **EH14** 12 kW electric heaters (sizes 31÷162)
- **EH10** 6 kW electric heaters (sizes 31÷81)
- **EH17** 18 kW electric heaters (sizes 61÷222)
- **EH12** 9 kW electric heaters (sizes 31÷81)
- **EH22** 27 kW electric heaters (sizes 82÷222)
- **EH24** 36 kW electric heaters (sizes 182÷222)
- **CPHG** Hot gas re-heating coil (sizes 82÷222)
- **CONTE** Electronic room control with display visible on the unit
- **CIWM** Electronic room control with display, for wall installation in built-in box
- **CTEM** Temperature ambient control with built-in probe
- **CSOND** Temperature and humidity ambient control with built-in probes
- **MOB** Serial port RS485 with Modbus protocol
- **CMSLWX** LonWorks serial communication module
- **BACX** BACnet serial communication module
- **PM** Phase monitor
- **PFCP** Power factor correction capacitors (cosfi > 0.9)
- **AMRX** Rubber antivibration mounts
- **MHP** High and low pressure gauges
- **CUE** External humidifier control with 0-10V command

Key to symbols:

- Accessories separately supplied

Packaged air-conditioning unit

Heat pump
Water cooled
Roof Top

Capacity from 51 to 392 kW

CLIVETPack²



The **CRH-XHE2** packaged air-conditioning units are installed outside the spaces being served. They come in various capacities and with a vast range of accessories. They are intended for the air-conditioning of large rooms or areas and are applied in **closed or open loop water systems**.

Designed to reduce work on site to a minimum, these units have been created for continuous operation with maximum energy saving through an extremely intelligent, advanced management of energy, supplying it only when and where needed.

The high efficiency of the innovative refrigeration circuit, optimized for functioning at partial loads, the free-cooling and the energy recovery of expelled air available as an option on the whole range, allow to reduce energy consumption and therefore the management costs and the emission of carbon dioxide.



Unit listed on
www.eurovent-certification.com



ErP compliant

functions and features



Heat pump



Water cooled



Outdoor installation



R-410A



Hermetic Scroll



FREE-COOLING



THOR
(Thermodynamic
Overboost Recovery)



Electronically
commutated
Plug Fan



Electronic expansion
valve

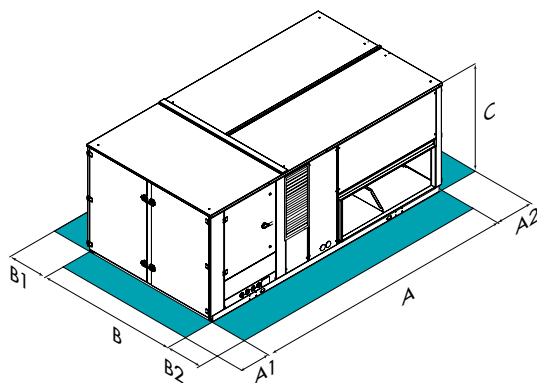


Constant Air Volume



Variable Air Volume

dimensions and clearances



CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size – CRH-XHE2		14.2	16.4	20.4	25.4	30.4	33.4	40.4	44.4
CAK A - Length	mm	3560	3560	4155	4155	4155	4155	4155	4155
CAK B - Width	mm	2295	2295	2300	2300	2300	2300	2300	2300
CAK C - Height	mm	1405	1405	1405	1405	1405	1705	1705	1705
CAK A1	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK A2	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK B1	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK B2	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK Operating weight	kg	1396	1456	1530	1549	1559	1602	1636	1641

Size – CRH-XHE2		49.4	54.4	60.4	70.4	80.4	90.4	100.4	110.4
CAK A - Length	mm	3910	3910	4900	4900	4900	5520	5520	5520
CAK B - Width	mm	2296	2296	2296	2296	2296	2296	2296	2296
CAK C - Height	mm	2250	2250	2250	2250	2250	2250	2250	2250
CAK A1	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK A2	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK B1	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK B2	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK Operating weight	kg	2080	2397	2613	2672	3074	3245	3461	3987

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAK Configuration with single fan section for full recirculation

versions and configurations

CONFIGURATION:

- **CAK** Configuration with single fan section for full recirculation (Standard)
- **CBK** Configuration with single fan section for recirculation and fresh air
- **CCK** Configuration with double fan section for recirculation, fresh and exhaust air

► CCKP

Configuration with double fan section with fresh air and THOR thermodynamic recovery

technical data

Size – CRH-XHE2			14.2	16.4	20.4	25.4	30.4	33.4	40.4	44.4
Eurovent							-	-	-	-
► Cooling capacity	(1)	kW	51,0	66,5	82,8	93,2	104	121	152	163
Sensible capacity	(1)	kW	38,5	48,9	62,9	69,8	77,4	88,9	106	114
Compressor power input	(1)	kW	9,10	13,0	15,4	17,4	19,1	21,2	26,6	28,8
EER	(1)	-	5,60	5,12	5,38	5,36	5,45	5,71	5,71	5,66
► Heating capacity	(2)	kW	52,5	72,2	85,5	98,4	109	125	159	174
Compressor power input	(2)	kW	9,90	15,5	18,2	20,4	23,8	27,7	30,1	33,3
COP	(2)	-	5,30	4,66	4,70	4,82	4,58	4,50	5,28	5,22
Refrigeration circuits		Nr	2	2	2	2	2	2	2	2
No. of compressors		Nr	2	4	4	4	4	4	4	4
Type of compressors	(3)	-	Scroll							
Supply airflow		l/s	2500	3194	3750	4167	4722	5139	5833	6389
Type of supply fan	(4)	-	RAD							
Number of supply fans		Nr	1	1	2	2	2	2	2	2
Max. static pressure supply fan	(5)	Pa	510	390	510	510	510	510	440	380
Water flow rate (Source Side)	(6)	l/s	2,87	3,80	4,69	5,28	5,88	6,79	8,53	9,16
Standard power supply		V	400/3/50							
Directive ErP (Energy Related Products)										
SEER - AVERAGE Climate	(7)	-	4,69	4,67	4,78	4,73	4,71	5,20	6,03	5,69
SCOP - AVERAGE Climate	(7)	-	3,75	3,98	3,73	4,20	4,02	4,26	4,95	4,44

Size – CRH-XHE2			49.4	54.4	60.4	70.4	80.4	90.4	100.4	110.4
► Cooling capacity	(1)	kW	175	187	216	255	283	338	366	392
Sensible capacity	(1)	kW	124	134	143	163	186	239	258	277
Compressor power input	(1)	kW	30,8	33,1	39,9	45,4	52,4	61,7	66,3	72,1
EER	(1)	-	5,68	5,65	5,40	5,63	5,40	5,48	5,53	5,44
► Heating capacity	(2)	kW	186	200	223	259	297	359	386	422
Compressor power input	(2)	kW	38,0	41,0	48,1	53,2	60,5	66,8	75,0	82,6
COP	(2)	-	4,90	4,88	4,64	4,87	4,91	5,38	5,15	5,12
Refrigeration circuits		Nr	2	2	2	2	2	2	2	2
No. of compressors		Nr	4	4	4	4	4	4	4	4
Type of compressors	(3)	-	Scroll							
Supply airflow		l/s	7222	8056	9167	10278	12222	14167	15556	16667
Type of supply fan	(4)	-	RAD							
Number of supply fans		Nr	3	3	4	4	4	6	6	6
Max. static pressure supply fan	(5)	Pa	630	540	660	570	360	620	540	460
Water flow rate (Source Side)	(6)	l/s	9,40	10,0	11,70	13,80	15,40	18,40	19,80	21,30
Standard power supply		V	400/3/50							
Directive ErP (Energy Related Products)										
SEER - AVERAGE Climate	(7)	-	5,24	4,39	4,83	5,18	4,65	4,90	4,46	4,63
SCOP - AVERAGE Climate	(7)	-	4,49	4,17	3,78	4,37	3,99	4,17	4,20	4,27

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Performance refers to operation at full re-circulation (CAK config.)

- (1) Data referred to the following conditions: Ambient air at 27°C/19°C W.B. Water to internal exchanger 30/35°C; EER referred only to compressors
- (2) Data referred to the following conditions: Ambient temperature 20°C DB; Exchanger water outlet 10°C; COP referred only to compressors

- (3) SCROLL = scroll compressor
- (4) RAD = radial fan
- (5) Net outside static pressure to win the outlet and intake onboard pressure drops
- (6) Nominal water capacity determined in function of the cooling power
- (7) Data calculated according to the EN 14825:2016 Regulation



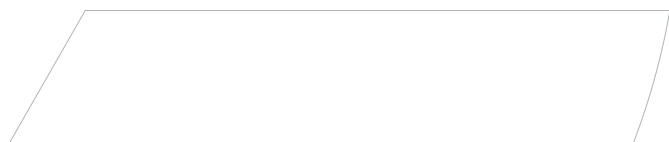
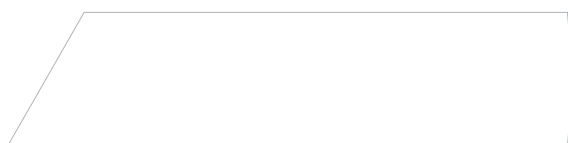
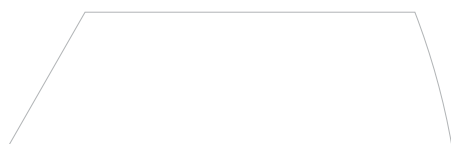
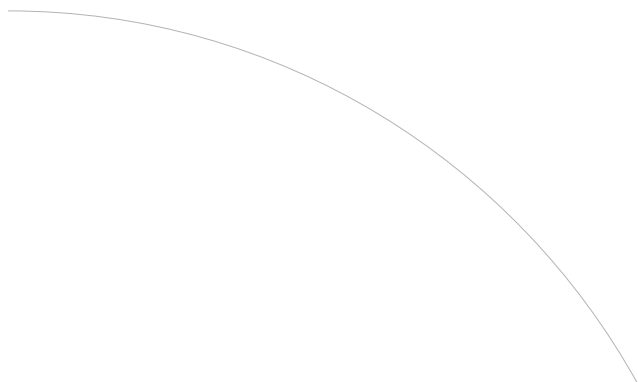
accessories

► THR	Exhaust air THOR thermodynamic energy recovery (CCKP version)	► IFWX	Steel mesh strainer on the water side
► FC	Thermal FREE-COOLING	► CHW2	Two-rows hot water coil
► FCE	Enthalpy FREE-COOLING	► CHWER	Energy recovery from food refrigeration
► M3	Downflow supply	► 3WVM	Modulating three-way valve
► M5	Upward supply air	► 2WVM	Modulating 2-way valve
► R3	Floor air inlet	► LTEMP1	Application for low outdoor temperature
► SER	Outdoor air damper manually set	► CPHG	Hot gas re-heating coil
► SERM	Outdoor air motorized on/off damper	► HSE3	3 kg/h immersed electrodes steam humidifier (sizes 15.1÷30.2)
► SERMD	Modulating motorized outdoor air damper	► HSE5	5 kg/h immersed electrodes steam humidifier (sizes 15.1÷30.2)
► PVAR	Variable airflow	► HSE8	8 kg/h immersed electrodes steam humidifier
► PCOSM	Constant supply airflow	► HSE9	15 kg/h immersed electrodes steam humidifier
► PAQC	Air quality probe for CO2 rate check	► HWS	Water to waste evaporating wet-deck humidifier
► PAQCV	Air quality sensor for CO2 and VOC rate check	► MHP	High and low pressure gauges
► VENH	High static pressure fans	► CMSC9	Serial communication module for Modbus supervisor
► F7	High efficiency F7 air filter	► CMSC10	Serial communication module for LonWorks supervisor
► FES	Electronic filters	► CMSC11	Serial communication module for BACnet-IP supervisor
► PSAF	Differential pressure switch for dirty air filters	► PM	Phase monitor
► EH12	9 kW electric heaters	► PFCP	Power factor correction capacitors (cosfi > 0.9)
► EH14	12 kW electric heaters	► DML	Demand Limit
► EH17	18 kW electric heaters	► DESM	Smoke detector
► EH20	24 kW electric heaters	► SFSTC	Progressive compressor start-up device
► EH24	36 kW electric heaters	■ CLMX	Clivet Master System
► EH28	48 kW electric heaters	► PCMO	Sandwich panels of the handling zone in M0 fire reaction class
► ACPC	Hydraulic pipework arrangement for loop with constant flow-rate	■ AMRX	Rubber antivibration mounts
► ACPV	Hydraulic pipework arrangement for loop with variable flow-rate	■ RCX	Roof curb
► ACPM	Hydraulic pipework arrangement for system with disposable water		
► ACIS	Antifreeze heater protection on the water side exchanger		

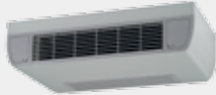
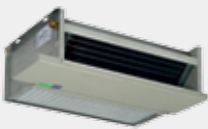
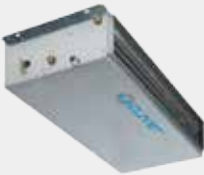
Key to symbols:

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.



TERMINAL Units and AHU

	Commercial			
				
	ELFOSpace	ELFODuct MP ELFODuct HP	ELFOSpace BOX3	ELFOSpace WALL3
Capacities (A27/W7)	1,5 ÷ 11 kW	6 ÷ 25 kW	3 ÷ 11 kW	2 ÷ 4,5 kW
ErP compliance (heat pumps only)				
 Vertical cased				
 Horizontal cased				
 Vertical uncased				
 Horizontal uncased				
 2 pipes				
 4 pipes				
 DC Motor				
 High head				
 RS485 Connection				

Commercial and Industrial



AQX

Airflow

350 ÷ 44400 l/s



Product



Sizes

32, 50 mm pitch

Frame / Panels

Thermal cut / 7 double-wall materials

Fans / Motors

Centrifugal and Plug fan / Asynchronous, Inverter, EC electronic control

Exchangers

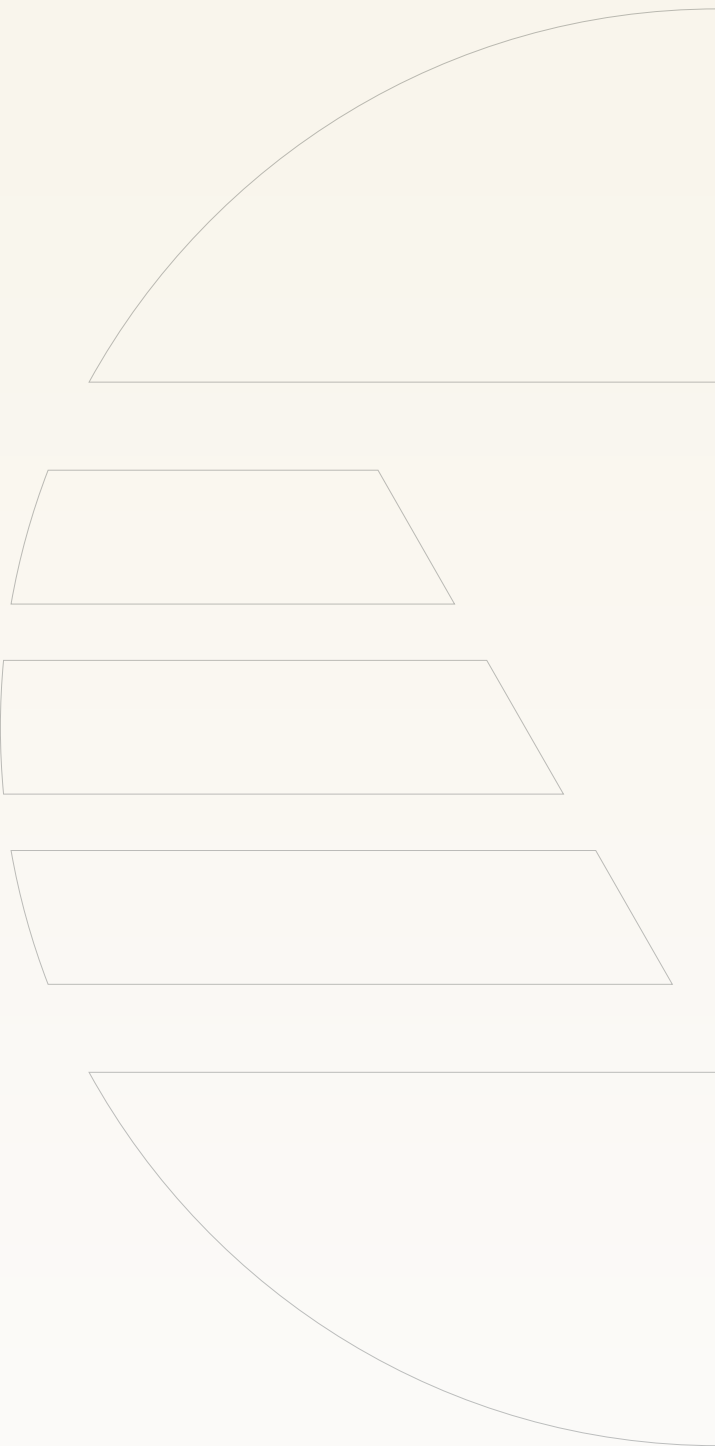
Water / High pressure hot water / Steam / Direct expansion

Heat recovery

Crossover flows / Rotary / Run-Around

Versions

Sanitizable / Adjusted



TERMINAL Units and AHU

System components

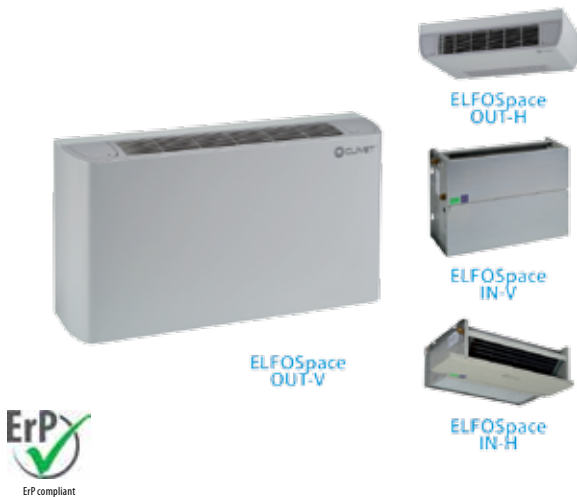
series	to		name	page
Water terminal units				
ELFOSPACE	003.0	051.0	ELFOSpace	148
CFK	007.0	041.0	ELFOSpace BOX3	152
CFW	007.0	021.0	ELFOSpace WALL3	156
ELFODuct MP	15	71	ELFODuct	158
ELFODuct HP	015.0	071.0	ELFODuct	162
CF	91	242	ELFODuct	166
CF-V	31	242	ELFODuct	168
Air handling units				
AQX	1	32	-	170
CLA	1	32	-	172



Water terminal unit

Cased and uncased, vertical and horizontal indoor installation
Capacity from 1,5 to 10,7 kW

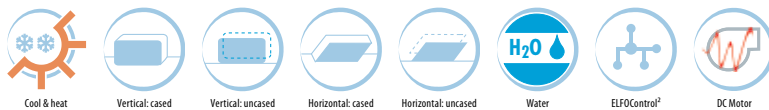
ELFOSpace



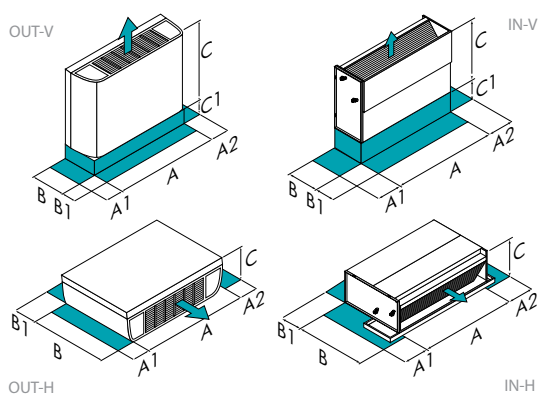
ELFOSpace OUT and IN are the cased and uncased water terminal for installation in the commercial sector.

- Versions for 2 and 4-pipe systems;
- Available with DC Brushless ventilating unit (sizes 003.0÷031.0);
- The available controls are simple and user-friendly, satisfying the most varied of requirements;
- Designed for connection to the ELFOControl² or general supervisors;
- Low noise operation and easy to clean;
- Twelve sizes available with an almost countless number of accessories for resolving any service application.

functions and features



dimensions and clearances



CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size – ELFOSPACE			003.0	005.0	007.0	009.0	011.0	015.0	017.0	021.0	025.0	031.0	041.0	051.0
OUTV	A - Length	mm	670	670	870	870	1070	1070	1270	1270	1470	1470	1670	1670
OUTV	B - Width	mm	220	220	220	220	220	220	220	220	220	220	220	220
OUTV	C - Height	mm	470	470	470	470	470	470	470	470	470	470	470	470
OUTV	A1	mm	200	200	200	200	200	200	200	200	200	200	200	200
OUTV	A2	mm	200	200	200	200	200	200	200	200	200	200	200	200
OUTV	B1	mm	250	250	250	250	250	250	250	250	250	250	250	250
OUTV	C1	mm	90	90	90	90	90	90	90	90	90	90	90	90
INV	A - Length	mm	450	450	650	650	850	850	1050	1050	1250	1250	1450	1450
INV	B - Width	mm	215	215	215	215	215	215	215	215	215	215	215	215
INV	C - Height	mm	450	450	450	450	450	450	450	450	450	450	450	450
INV	A1	mm	200	200	200	200	200	200	200	200	200	200	200	200
INV	A2	mm	200	200	200	200	200	200	200	200	200	200	200	200
INV	B1	mm	250	250	250	250	250	250	250	250	250	250	250	250
INV	C1	mm	90	90	90	90	90	90	90	90	90	90	90	90
OUTH	A - Length	mm	670	670	870	870	1070	1070	1270	1270	1470	1470	1670	1670
OUTH	B - Width	mm	470	470	470	470	470	470	470	470	470	470	470	470
OUTH	C - Height	mm	220	220	220	220	220	220	220	220	220	220	220	220
OUTH	A1	mm	200	200	200	200	200	200	200	200	200	200	200	200
OUTH	A2	mm	200	200	200	200	200	200	200	200	200	200	200	200
OUTH	B1	mm	90	90	90	90	90	90	90	90	90	90	90	90
INH	A - Length	mm	545	545	745	745	945	945	1145	1145	1345	1345	1545	1545
INH	B - Width	mm	450	450	450	450	450	450	450	450	450	450	450	450
INH	C - Height	mm	215	215	215	215	215	215	215	215	215	215	215	215
INH	A1	mm	200	200	200	200	200	200	200	200	200	200	200	200
INH	A2	mm	200	200	200	200	200	200	200	200	200	200	200	200
INH	B1	mm	90	90	90	90	90	90	90	90	90	90	90	90
CC2-INV	Operating weight	kg	11	11	14	14	20	20	23	24	27	28	31	34
CC2-INH	Operating weight	kg	11	12	14	15	20	21	23	25	27	29	31	35
CC4-INV	Operating weight	kg	12	12	14	15	21	22	24	26	28	30	32	36
CC4-INH	Operating weight	kg	12	12	15	16	21	22	24	26	28	30	32	36
CC2-OUTV	Operating weight	kg	14	14	16	17	22	24	26	28	30	32	34	38
CC2-OUTH	Operating weight	kg	15	15	18	19	24	26	28	30	33	34	37	41
CC4-OUTH	Operating weight	kg	16	16	19	20	26	27	30	31	34	36	39	42
CC4-OUTV	Operating weight	kg	14	15	17	18	24	25	27	29	31	33	35	39

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.
 OUTV Vertical cased version
 INV Vertical uncased version
 OUTH Horizontal cased version
 INH Horizontal uncased version
 CC2-INV 2 pipes-Vertical uncased version

CC2-INH 2 pipes-Horizontal uncased version
 CC4-INV 4-pipe-Vertical uncased version
 CC4-INH 4-pipe-Horizontal uncased version
 CC2-OUTV 2 pipes-Vertical cased version
 CC2-OUTH 2 pipes-Horizontal cased version
 CC4-OUTH 4-pipe-Horizontal cased version
 CC4-OUTV 4-pipe-Vertical cased version

versions and configurations

VERSION:

- **INV** Vertical uncased version (Standard)
- **OUTV** Vertical cased version
- **OUTH** Horizontal cased version
- **INH** Horizontal uncased version

COIL CONFIGURATION:

- **CC2** Coil configuration for 2-pipe system (Standard)
- **CC4** Coil configuration for 4-pipe system

WATER FITTINGS:

- **SX** Water fittings to the left (Standard)
- **DX** Water fittings to the right

technical data

Size – ELFOSPACE			003.0	005.0	007.0	009.0	011.0	015.0	017.0	021.0	025.0	031.0	041.0	051.0
2-pipe														
HIGH SPEED														
Airflow		m ³ /h	370	400	500	550	670	720	1.000	1.050	1.280	1.310	1.910	1.940
► Cooling capacity	(1)	kW	1,50	2,00	2,53	3,02	3,75	4,25	5,52	6,42	7,53	9,02	9,60	10,70
Sensible capacity	(1)	kW	1,29	1,62	2,07	2,31	2,87	3,23	4,33	4,80	5,67	6,62	7,64	8,36
Water flow-rate	(1)	l/h	258	344	435	519	645	731	949	1.104	1.295	1.551	1.651	1.710
Water pressure drop	(1)	kPa	13,10	16,30	18,50	20,80	22,60	24,10	24,50	27,10	28,80	29,20	31,00	33,40
► Heating capacity	(2)	kW	1,87	2,46	2,99	3,36	4,08	4,72	6,00	6,65	7,75	9,05	10,55	11,60
Water flow-rate	(2)	l/h	322	422	514	577	702	812	1.032	1.144	1.333	1.557	1.815	1.995
Water pressure drop	(2)	kPa	17,70	21,40	22,40	22,30	23,30	25,90	25,20	25,30	26,50	25,60	32,50	34,10
Total power input		W	49	49	66	66	71	71	130	130	146	146	224	224
MEDIUM SPEED														
Airflow		m ³ /h	285	310	400	440	590	635	890	935	1.140	1.160	1.640	1.660
► Cooling capacity	(1)	kW	1,28	1,71	2,20	2,63	3,47	3,93	5,14	5,97	7,01	8,37	8,73	9,72
Sensible capacity	(1)	kW	1,07	1,35	1,76	1,97	2,62	2,95	3,98	4,42	5,22	6,07	6,85	7,48
Water flow-rate	(1)	l/h	219	294	379	452	596	676	883	1.028	1.205	1.439	1.502	1.672
Water pressure drop	(1)	kPa	9,50	11,90	14,00	15,80	19,30	20,70	21,20	23,50	25,00	25,10	25,70	27,60
► Heating capacity	(2)	kW	1,57	2,08	2,58	2,90	3,75	4,35	5,56	6,16	7,18	8,35	9,54	10,47
Water flow-rate	(2)	l/h	271	357	444	498	645	747	956	1.060	1.235	1.437	1.641	1.800
Water pressure drop	(2)	kPa	12,60	15,30	16,70	16,60	19,70	21,90	21,60	21,70	22,80	21,80	26,60	27,70
Total power input		W	34	34	53	53	56	56	105	105	123	123	200	200
LOW SPEED														
Airflow		m ³ /h	225	245	305	335	460	500	650	680	870	890	1.490	1.515
► Cooling capacity	(1)	kW	1,10	1,48	1,86	2,22	2,97	3,39	4,23	4,90	5,93	7,10	8,23	9,19
Sensible capacity	(1)	kW	0,90	1,14	1,45	1,62	2,19	2,49	3,18	3,52	4,30	5,02	6,40	7,00
Water flow-rate	(1)	l/h	190	254	320	382	511	583	727	843	1.019	1.221	1.416	1.580
Water pressure drop	(1)	kPa	7,10	8,90	10,00	11,20	14,20	15,40	14,40	15,80	17,90	18,10	22,80	24,60
► Heating capacity	(2)	kW	1,35	1,78	2,16	2,42	3,18	3,71	4,52	4,99	6,01	7,02	8,96	9,86
Water flow-rate	(2)	l/h	232	306	371	416	548	638	777	859	1.034	1.207	1.541	1.695
Water pressure drop	(2)	kPa	9,20	11,20	11,70	11,60	14,20	16,00	14,30	14,20	15,90	15,40	23,50	24,60
Total power input		W	24	24	36	36	38	38	71	71	88	88	175	175
4-pipe														
HIGH SPEED														
Airflow		m ³ /h	350	380	480	520	640	680	960	1.000	1.230	1.260	1.850	1.880
► Cooling capacity	(1)	kW	1,45	1,94	2,47	2,92	3,65	4,11	5,39	6,23	7,35	8,81	9,42	10,51
Sensible capacity	(1)	kW	1,24	1,57	2,02	2,22	2,78	3,11	4,21	4,64	5,52	6,44	7,47	8,18
Water flow-rate	(1)	l/h	249	334	425	502	628	707	927	1.072	1.264	1.515	1.620	1.808
Water pressure drop	(1)	kPa	12,30	15,40	17,60	19,50	21,40	22,50	23,40	25,50	27,40	27,90	29,80	32,20
► Heating capacity	(3)	kW	1,67	1,76	2,83	2,98	3,89	4,04	5,59	5,74	7,10	7,21	9,86	9,96
Water flow-rate	(3)	l/h	144	151	243	256	335	348	481	494	611	620	848	856
Water pressure drop	(3)	kPa	5,90	6,50	9,40	10,50	17,20	18,60	33,30	35,10	30,60	31,50	39,20	40,00
Total power input		W	49	49	66	66	71	71	130	130	146	146	224	224
MEDIUM SPEED														
Airflow		m ³ /h	270	295	385	415	560	590	850	880	1.100	1.260	1.850	1.880
► Cooling capacity	(1)	kW	1,24	1,66	2,15	2,54	3,36	3,76	5,00	5,76	6,86	8,24	8,64	9,64
Sensible capacity	(1)	kW	1,03	1,31	1,73	1,89	2,53	2,81	3,86	4,23	5,10	5,96	6,76	7,40
Water flow-rate	(1)	l/h	212	285	371	437	578	647	860	990	1.180	1.416	1.487	1.658
Water pressure drop	(1)	kPa	8,90	11,30	13,40	14,70	18,20	18,90	20,10	21,80	23,90	24,40	25,10	27,00
► Heating capacity	(3)	kW	1,41	1,49	2,44	2,57	3,57	3,68	5,16	5,28	6,60	6,71	9,00	9,08
Water flow-rate	(3)	l/h	121	128	210	221	307	317	444	454	567	577	774	781
Water pressure drop	(3)	kPa	4,20	4,70	7,10	7,80	14,50	15,40	28,40	29,70	26,40	27,30	32,60	33,20
Total power input		W	34	34	53	53	56	56	105	105	123	123	200	200
LOW SPEED														
Airflow		m ³ /h	210	230	295	320	445	475	630	660	850	865	1.470	1.485
► Cooling capacity	(1)	kW	1,06	1,42	1,83	2,16	2,91	3,29	4,15	4,82	5,85	6,98	8,17	9,08
Sensible capacity	(1)	kW	0,86	1,10	1,43	1,57	2,14	2,41	3,11	3,45	4,24	4,92	6,34	6,91
Water flow-rate	(1)	l/h	182	244	314	372	501	566	714	828	1.005	1.200	1.405	1.562
Water pressure drop	(1)	kPa	6,50	8,30	9,60	10,70	13,70	14,40	13,90	15,30	17,30	17,50	22,40	24,00
► Heating capacity	(3)	kW	1,19	1,26	2,05	2,16	3,06	3,19	4,24	4,37	5,57	5,63	8,47	8,52
Water flow-rate	(3)	l/h	103	109	176	186	264	275	364	376	479	484	729	733
Water pressure drop	(3)	kPa	3,00	3,40	5,00	5,50	10,70	11,60	19,10	20,30	18,80	19,20	29,00	29,30
Total power input		W	24	24	36	36	38	38	71	71	88	88	175	175
Standard power supply		V	220-240/1/50											
Type of supply fan	(4)	-	CFG											
No. of supply fans		-	1	1	1	1	2	2	2	2	2	2	3	3
H Sound pressure level	(5)	dB(A)	44	44	50	51	43	43	49	51	54	55	57	57
M Sound pressure level	(5)	dB(A)	37	37	44	45	39	40	47	47	52	52	54	54
L Sound pressure level	(5)	dB(A)	30	31	36	37	32	33	40	41	45	46	51	52
H Sound power level	(5)	dB(A)	55	55	61	62	54	54	60	62	65	66	68	68
M Sound power level	(5)	dB(A)	48	48	55	56	50	51	58	58	63	63	65	65
L Sound power level	(5)	dB(A)	41	42	47	48	43	44	51	52	56	57	62	63

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Airflow with free outlet (0 Pa static pressure)

- (1) Entering exchanger water 7°C (temperature differential 5°C) - Ambient air 27°C D.B. / 19°C W.B.
- (2) Entering exchanger water 45°C (temperature differential 5°C) - Ambient air 20°C

(3) Entering exchanger water 65°C (temperature differential 10°C) - Ambient air 20°C

(4) CFG = AC centrifugal fan

(5) Sound levels tested in anechoic chamber and referring to units for 2-pipe systems. The sound pressure level refers to 1 m from the external surface of the unit operating in the open field..

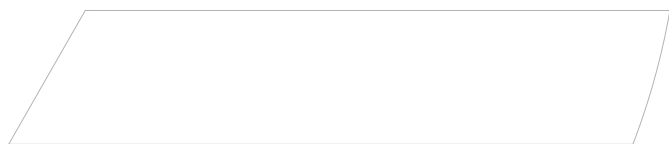
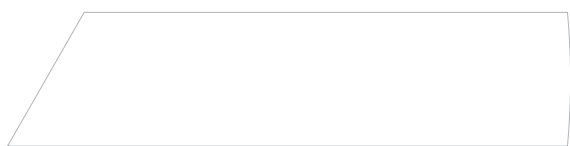
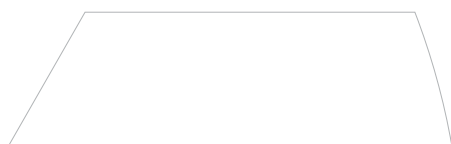
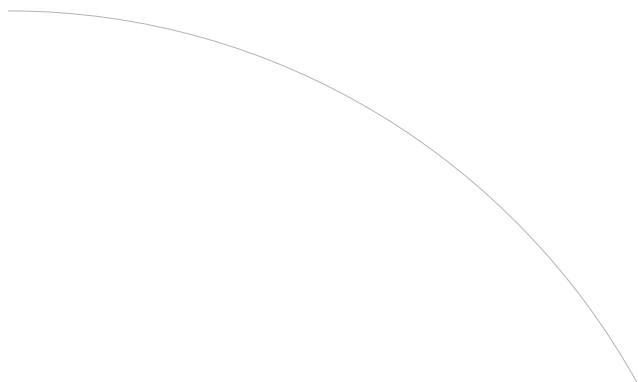
accessories

► MR	90° air outlet	► 2V4X	ON/OFF 2 way valve kit for 4-pipe system
► R3	Downward air return	► 3V2	Three-way valve kit for 2-pipe type "on/off" system
► RF	Front air return	► 3V2X	Three-way valve kit for 2-pipe type "on/off" system
► RP	Rear intake	► 3V4	Three-way valve kit for 4-pipe system type "on/off"
► RPFO	Rear intake with oblique downward filter extraction	► 3V4X	Three-way valve kit for 4-pipe system type "on/off"
► RPFB	Rear intake with vertical downward filter extraction	► 10V2	0-10V 3-way valve kit for 2-pipe system
► RPFA	Rear intake with vertical upward filter extraction	► 10V2X	0-10V 3-way valve kit for 2-pipe system
► VEC	High efficiency EC fan (sizes 003.0÷031.0)	► 10V4	0-10V 3 way valve kit for 4-pipe system
► CTSP1	CLIVET TALK TERMINAL SPACE electronics with RS485 Modbus serial port	► 10V4X	0-10V 3 way valve kit for 4-pipe system
► CPVM	Control additional card of 0-10V valve and EC fan (available only with options: CTSP1)	► KR90X	90° pipe-fitting kit
► TR	Terminal block for motor connection	► BRV	Auxiliary condensate collection pan (vertical installation)
► TRM	Terminal block with minimum water temperature clickson	► BRVX	Auxiliary condensate collection pan (vertical installation)
► HIDF1	Control on the unit: off + 3 speed switch	► BROP	Auxiliary condensate collection pan (horizontal installation)
► HIDF2	Built-in control: BULB thermostat (3 speed.+off+E/I+Temp.selection)	► BROPX	Auxiliary condensate collection pan (horizontal installation)
► HIDF4	Control on the unit: BULB thermostat(3speed+off+E/I+temp.select.)+ min. temperature thermostat	► CDP	Condensate drain pump
► HIDF5	Control on the unit:BULB thermostat + on/off heaters	► CDPX	Condensate drain pump
► HIDF6	Control mounted on unit's side: multi-function electronic room thermostat	► SERX	Manual outside air damper for Vertical and horizontal installation
► HIDF7	Built-in control: electronic thermostat with display	► SERMX	Outdoor air motorized on/off damper
► HIDF8	Control built-in installed: electronic thermostat with display for 0-10Vdc fan (sizes 003.0÷031.0)	► PI90X	Support feet for built-in vertical units h=90mm
► TRP	Terminal block with closing cover IP40	► PI155X	Support plinth for concealed vertical units h=155mm
► TRMP	Terminal block with closing cover IP40 and minimum water temperature clickson	► PV90X	Support plinth with cover for in-view vertical units h=90mm
■ ► HIDE2X	Remote control with E/I +3V +on/off for wall installation	► PV155X	Support plinth with cover for in-view vertical units h=155mm
■ ► HIDE3X	Plurifunctional remote control for wall installation	► PVG155X	Support feet with cover h=155mm and return grille
■ ► HIDE4X	Plurifunctional room control for 0-10V valves	► FTZX	Galvanized steel plate falseframe
■ ► HIDT2X	HID-T2 electronic room control	► PNAX	Pre-painted panel with supply and return grilles
■ ► HIDT3X	HID-T3 electronic room control	► PPVX	Rear cover panel for OUT-V without support feet
■ ► HIDT18X	HIDT18X electronic room control for wall installation	► PPV90X	Rear cover panel for OUT-V with support feet h=90mm
■ ► TMX	Hot water min. temperature thermostat	► PPV155X	Rear cover panel for OUT-V with support feet h=155mm
■ ► PTABX	Remote probe for room air temperature for electromechanical thermostats.	► PRAX	Air intake straight plenum
■ ► DCPX	Control device for more units with a single room control.	► PRCAX	Air intake plenum with circular fittings and air filter
► RE	Electric heaters	► PR90AX	90° air intake plenum
■ ► KBI2	2-pipe water balancing kit = ball valve+water balancing kit	► PRMX	Air discharge plenum
■ ► KBI2X	2-pipe water balancing kit = ball valve+water balancing kit	► PR90MX	90° air outlet plenum
► KBI4	4-pipe water balancing kit = 2 ball valves+2 water balancing kit	► PRCMX	Air outlet plenum with circular fittings+internal thermal and acoustic insulation
■ ► KBI4X	4-pipe water balancing kit = 2 ball valves+2 water balancing kit	► PRCTX	Terminal plenum with circular connections
► 2V2	ON/OFF 2 way valve kit for 2-pipe system	► PRTX	0-100 mm telescopic extension
■ ► 2V2X	ON/OFF 2 way valve kit for 2-pipe system	► DAOJX	Air supply duct with flexible connection
► 2V4	ON/OFF 2 way valve kit for 4-pipe system	► GAAX	Air intake duct with flexible joint
		► GRMX	Air outlet grille without air filter
		► AGRMX	Air outlet grille in aluminium without filter
		► GRAX	Return grille with filter
		► AGRAX	Air intake grille with air filter

Key to symbols and notes

■ Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.



Water terminal unit

Cassette-type indoor installation

Capacity from 3,02 to 10,64 kW**ELFOSpace BOX3**

The **ELFOSpace BOX3** terminal unit has been designed for installation in suspended ceilings without requiring any extra part for operation.

The ELFOSpace BOX3 is therefore suited for use in environments such as shops, restaurants, hotels and gyms, where the excellent outflowing air control makes them ideal air-conditioning units:

- ▶ versions for 2 and 4-pipe systems;
- ▶ available with standard DC Brushless motor;
- ▶ suited for installation in standard suspended ceilings with 600 x 600 mm module;
- ▶ high standards of efficiency and quiet operation for unit with 800 X 800 mm module;
- ▶ standard version with infrared electronics;
- ▶ the unit comes with a condensate drain pump built-in.

**functions and features**

Cool & heat



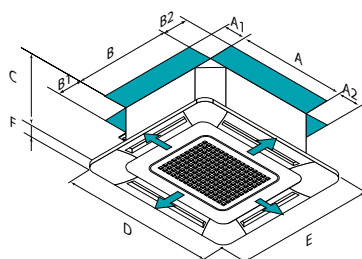
Cassette type



Water



DC Motor

dimensions and clearances

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size – CFK			007.0	011.0	015.0	021.0	031.0	041.0
CC2	A - Length	mm	575	575	575	840	840	840
CC2	B - Width	mm	575	575	575	840	840	840
CC2	C - Height	mm	261	261	261	230	300	300
CC2	D - Length	mm	647	647	647	950	950	950
CC2	E - Width	mm	647	647	647	950	950	950
CC2	F - Height	mm	50	50	50	45	45	45
CC2	A1	mm	>1000	>1000	>1000	>1000	>1000	>1000
CC2	A2	mm	>1000	>1000	>1000	>1000	>1000	>1000
CC2	B1	mm	>1000	>1000	>1000	>1000	>1000	>1000
CC2	B2	mm	>1000	>1000	>1000	>1000	>1000	>1000
CC2	Operating weight	kg	16,5+2,5	16,5+2,5	16,5+2,5	23+6	27+6	29,5+6
CC4	A - Length	mm	575	575	575	840	840	840
CC4	B - Width	mm	575	575	575	840	840	840
CC4	C - Height	mm	261	261	261	300	300	300
CC4	D - Length	mm	647	647	647	950	950	950
CC4	E - Width	mm	647	647	647	950	950	950
CC4	F - Height	mm	50	50	50	45	45	45
CC4	A1	mm	>1000	>1000	>1000	>1000	>1000	>1000
CC4	A2	mm	>1000	>1000	>1000	>1000	>1000	>1000
CC4	B1	mm	>1000	>1000	>1000	>1000	>1000	>1000
CC4	B2	mm	>1000	>1000	>1000	>1000	>1000	>1000
CC4	Operating weight	kg	16,7+2,5	16,7+2,5	16,7+2,5	27,5+6	30+6	30+6

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CC2 2 pipes
CC4 4-pipe

versions and configurations

PLASTIC FRAME FOR AIR SUPPLY AND RETURN:

- **PLAX** Plastic frame for air supply and return

COIL CONFIGURATION:

- **CC2** Coil configuration for 2-pipe system (Standard)
- **CC4** Coil configuration for 4-pipe system

STANDARD CONFIGURATION:

- **IRPCB** Electronics with infrared remote control
- **R05** R05 infrared remote control
- **VEC** High efficiency EC fan

technical data

Size – CFK		007.0	011.0	015.0	021.0	031.0	041.0
2-pipe							
HIGH SPEED							
Airflow	m3/h	560	717	785	1.133	1.596	1.850
► Cooling capacity	(1) kW	3,02	3,93	4,24	5,58	7,01	10,64
Sensible capacity	(1) kW	2,23	2,93	3,16	4,21	5,27	7,92
Water flow-rate	(1) l/h	520	680	730	960	1.210	1.830
Water pressure drop	(1) kPa	7,40	12,00	9,40	21,00	23,00	36,00
► Heating capacity	(2) kW	3,48	4,53	4,90	6,57	8,20	12,19
Water flow-rate	(2) l/h	600	790	850	1.140	1.420	2.120
Water pressure drop	(2) kPa	10,64	14,08	12,54	30,22	27,17	44,62
Total power input	W	23	27	32	42	90	124
MEDIUM SPEED							
Airflow	m3/h	392	502	550	793	1.117	1.295
► Cooling capacity	(1) kW	2,29	3,00	3,25	4,42	5,52	8,10
Sensible capacity	(1) kW	1,67	2,21	2,39	3,29	4,09	5,95
Water flow-rate	(1) l/h	390	520	560	760	950	1.400
Water pressure drop	(1) kPa	4,63	7,60	5,98	14,17	15,34	22,66
► Heating capacity	(2) kW	2,62	3,44	3,72	5,15	6,40	9,19
Water flow-rate	(2) l/h	450	600	650	890	1.110	1.600
Water pressure drop	(2) kPa	6,49	8,76	7,80	19,89	17,77	27,47
Total power input	W	12	17	22	29	35	57
LOW SPEED							
Airflow	m3/h	280	359	393	567	798	925
► Cooling capacity	(1) kW	1,74	2,31	2,49	3,45	4,29	6,17
Sensible capacity	(1) kW	1,26	1,67	1,80	2,54	3,15	4,48
Water flow-rate	(1) l/h	300	400	430	590	740	1.060
Water pressure drop	(1) kPa	2,91	4,78	3,62	9,24	9,90	11,87
► Heating capacity	(2) kW	1,95	2,59	2,80	4,00	4,95	6,90
Water flow-rate	(2) l/h	340	450	490	690	860	1.200
Water pressure drop	(2) kPa	3,92	5,39	4,79	12,88	11,43	16,84
Total power input	W	8	12	14	18	17	39
4-pipe							
HIGH SPEED							
Airflow	m3/h	560	717	785	1.187	1.768	1.852
► Cooling capacity	(1) kW	2,39	2,88	3,24	4,94	9,02	9,16
Sensible capacity	(1) kW	1,88	2,33	2,63	3,97	6,98	7,11
Water flow-rate	(1) l/h	410	500	560	850	1.550	1.580
Water pressure drop	(1) kPa	19,10	14,50	20,90	15,00	70,00	72,00
► Heating capacity	(3) kW	3,31	3,97	4,05	5,80	8,82	9,34
Water flow-rate	(3) l/h	290	350	350	500	770	810
Water pressure drop	(3) kPa	11,56	16,32	16,35	17,13	19,84	23,96
Total power input	W	23	27	39	47	106	124
MEDIUM SPEED							
Airflow	m3/h	397	502	550	831	1.238	1.323
► Cooling capacity	(1) kW	1,90	2,31	2,60	3,94	6,87	7,11
Sensible capacity	(1) kW	1,46	1,81	2,04	3,08	5,20	5,41
Water flow-rate	(1) l/h	330	400	450	680	1.180	1.230
Water pressure drop	(1) kPa	12,91	9,79	13,70	7,91	42,74	46,31
► Heating capacity	(3) kW	2,57	3,09	3,15	4,50	6,62	7,15
Water flow-rate	(3) l/h	220	270	270	390	580	620
Water pressure drop	(3) kPa	7,50	10,65	10,68	11,14	12,15	15,23
Total power input	W	12	17	22	41	85	92
LOW SPEED							
Airflow	m3/h	284	359	393	594	884	945
► Cooling capacity	(1) kW	1,47	1,81	2,04	3,09	5,19	5,40
Sensible capacity	(1) kW	1,11	1,39	1,56	2,36	3,87	4,04
Water flow-rate	(1) l/h	250	310	350	530	890	930
Water pressure drop	(1) kPa	8,16	4,81	6,27	4,45	17,89	20,94
► Heating capacity	(3) kW	1,96	2,38	2,42	3,45	4,93	5,35
Water flow-rate	(3) l/h	170	210	210	300	430	470
Water pressure drop	(3) kPa	4,73	6,84	6,80	6,42	6,01	8,42
Total power input	W	8	12	14	30	42	58
Standard power supply	V	220-240/1/50					
Type of supply fan	(4) -	RAD DC					
No. of supply fans	-	1					
H Sound pressure level	(5) dB(A)	34	40	43	42	48	50
M Sound pressure level	(5) dB(A)	29	36	37	33	39	40
L Sound pressure level	(5) dB(A)	21	28	30	26	32	33
H Sound power level	(5) dB(A)	45	51	54	53	59	61
M Sound power level	(5) dB(A)	40	47	49	45	51	52
L Sound power level	(5) dB(A)	32	40	41	37	43	45

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

- (1) Entering exchanger water 7°C (temperature differential 5°C) - Ambient air 27°C D.B. / 19°C W.B.
 (2) Entering exchanger water 45°C (temperature differential 5°C) - Ambient air 20°C

- (3) Entering exchanger water 65°C (temperature differential 10°C) - Ambient air 20°C
 (4) RAD DC = DC Brushless radial fan
 (5) Sound levels tested in anechoic chamber and referring to units for 2-pipe systems. The sound pressure level refers to 1 m from the external surface of the unit operating in the open field.

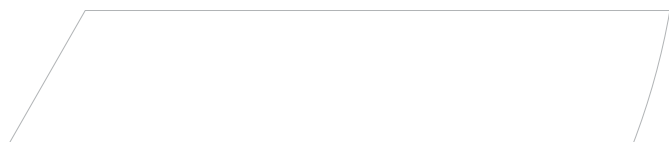
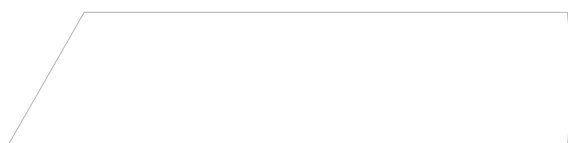
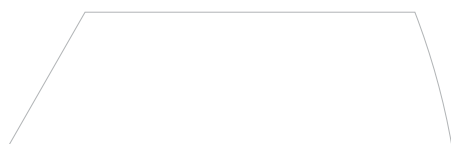
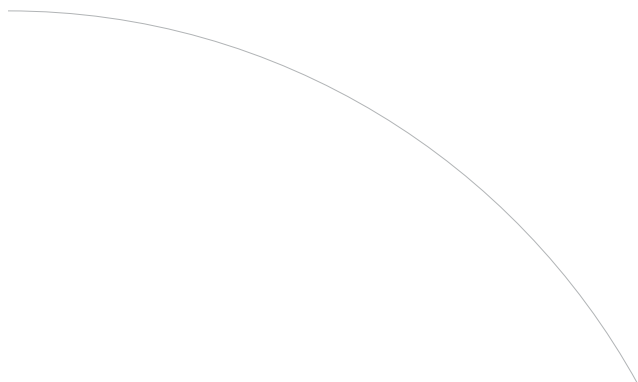
accessories

- ▶ **3V2X** Three-way valve kit for 2-pipe "on/off" system
- ▶ **3V4X** Three-way valve kit for 4-pipe "on/off" system
- ▶ **KJR90X** KJR90 electronic room control for wall installation
- ▶ **KJR150X** Indoor units group controller
- ▶ **CCM30BX** Centralized controller with case
- ▶ **CCM08X** Bacnet gateway
- ▶ **LONGWX** Lonworks gateway
- ▶ **CCM18UX** Modbus gateway up to 16 indoor units
- ▶ **CCM18X** Modbus gateway up to 64 indoor units
- ▶ **DTX** Auxiliary condensate collection tray

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.



Water terminal unit

Indoor installation, wall-mounted, cased

Capacity from 2,20 to 4,45 kW**ELFOSpace WALL3**

ELFOSpace WALL3 is a range of cased water terminals that are cleverly designed to be placed in the space above doors or at mid-height on walls, and are particularly suitable, thanks to the accurate design, to residential and hotel installations.

These units also feature:

- ▶ available with standard DC Brushless motor;
- ▶ new design;
- ▶ standard version with infrared electronics;
- ▶ high efficiency and quiet operation;
- ▶ air flow direction control;
- ▶ the unit is supplied with 3-way valve built-in.

**functions and features**

Cool & heat



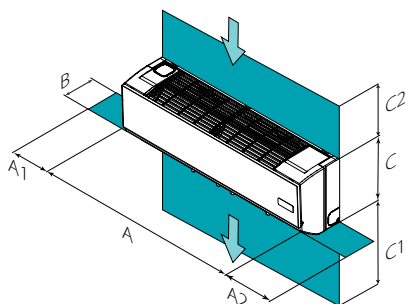
Vertical: cased



Water



DC Motor

dimensions and clearances

Size – CFW		007.0	009.0	011.0	017.0	021.0
A - Length	mm	916	916	916	1074	1074
B - Width	mm	218	218	218	221	221
C - Height	mm	290	290	290	317	317
A1	mm	300	300	300	300	300
A2	mm	300	300	300	300	300
C1	mm	2000÷3000	2000÷3000	2000÷3000	2000÷3000	2000÷3000
C2	mm	300	300	300	300	300
Operating weight	kg	12	12	12	14,7	14,7

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAUTION!For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

STANDARD CONFIGURATION:

- **IRPCB** Electronics with infrared remote control
- **R05** R05 infrared remote control
- **VEC** High efficiency EC fan
- **3V2** Three-way valve kit for 2-pipe "on/off" system

technical data

Size – CFW			007.0	009.0	011.0	017.0	021.0
2-pipe							
HIGH SPEED							
Airflow	m ³ /h		425	510	680	850	1.020
► Cooling capacity	(1) kW		2,20	2,64	3,08	4,07	4,45
Sensible capacity	(1) kW		1,63	1,97	2,33	3,05	3,36
Water flow-rate	(1) l/h		380	450	530	700	770
Water pressure drop	(1) kPa		23,10	33,60	42,00	34,90	36,30
► Heating capacity	(2) kW		2,57	3,15	3,71	4,85	5,38
Water flow-rate	(2) l/h		450	550	640	840	930
Water pressure drop	(2) kPa		29,95	44,14	57,16	41,73	47,32
Total power input	W		11	20	24	28	38
MEDIUM SPEED							
Airflow	m ³ /h		410	427	550	692	820
► Cooling capacity	(1) kW		2,14	2,34	2,71	3,57	3,91
Sensible capacity	(1) kW		1,59	1,74	2,03	2,65	2,93
Water flow-rate	(1) l/h		370	400	470	610	670
Water pressure drop	(1) kPa		22,11	27,40	33,79	27,85	29,09
► Heating capacity	(2) kW		2,51	2,78	3,24	4,23	4,69
Water flow-rate	(2) l/h		430	480	560	730	810
Water pressure drop	(2) kPa		28,65	35,63	45,16	32,90	37,26
Total power input	W		9	16	20	24	32
LOW SPEED							
Airflow	m ³ /h		320	349	504	586	670
► Cooling capacity	(1) kW		1,78	2,02	2,56	3,18	3,43
Sensible capacity	(1) kW		1,31	1,49	1,91	2,35	2,55
Water flow-rate	(1) l/h		310	350	440	550	590
Water pressure drop	(1) kPa		16,19	21,37	30,70	22,86	23,22
► Heating capacity	(2) kW		2,08	2,40	3,05	3,76	4,10
Water flow-rate	(2) l/h		360	420	530	650	710
Water pressure drop	(2) kPa		20,81	27,58	40,80	26,85	29,43
Total power input	W		8	9	17	18	27
Standard power supply	V		220-240/1/50				
Type of supply fan	(3)	-	TGZ DC				
No. of supply fans	-		1	1	1	1	1
H Sound pressure level	(4) dB(A)		30	32	36	38	40
M Sound pressure level	(4) dB(A)		26	28	32	34	36
L Sound pressure level	(4) dB(A)		23	25	29	30	31
H Sound power level	(4) dB(A)		41	44	47	49	51
M Sound power level	(4) dB(A)		37	39	43	45	47
L Sound power level	(4) dB(A)		34	36	40	41	42

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

(1) Entering exchanger water 7°C (temperature differential 5°C) - Ambient air 27°C D.B. / 19°C W.B.

(2) Entering exchanger water 45°C (temperature differential 5°C) - Ambient air 20°C

(3) TGZ DC = DC Brushless tangential fan

(4) Sound levels tested in anechoic chamber and referring to units for 2-pipe systems. The sound pressure level refers to 1 m from the external surface of the unit operating in the open field.

accessories

- **KJR90X** Wall electronic room control
- **KJR150X** Indoor units group controller
- **CCM30BX** Centralized controller with case
- **CCM08X** Bacnet gateway

- **LONGWX** Lonworks gateway
- **CCM18UX** Modbus gateway up to 16 indoor units
- **CCM18X** Modbus gateway up to 64 indoor units

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

Water terminal unit

Uncased horizontal and vertical indoor installation
Ductable

Capacity from 6 to 20,2 kW

ELFODuct

The **ELFODuct MP** are the new generation air-treatment water terminal units ideal for installations where ducted air distribution is necessary. The units are designed for installation in suspended ceilings or lining walls and are characterized by their compactness and extremely low noise levels.

The advantages of the new series are:

- Version for 2 and 4-pipe systems;
- Version for horizontal installations in suspended ceilings and version for vertical installations in lining walls;
- High energy efficiency thanks to the configuration with fan deck with DC Brushless motor;
- Available head up to **120 Pa**;
- Very low sound levels;
- Internal exchanger with large exchange surface, easily reversed water connections even on construction site;
- Complete accessories range for the full installation;
- Complete range of electromechanical and electronic thermostats and serial port RS485 with MODBUS protocol.



functions and features



Cool & heat



Vertical: uncased



Horizontal: uncased



Water

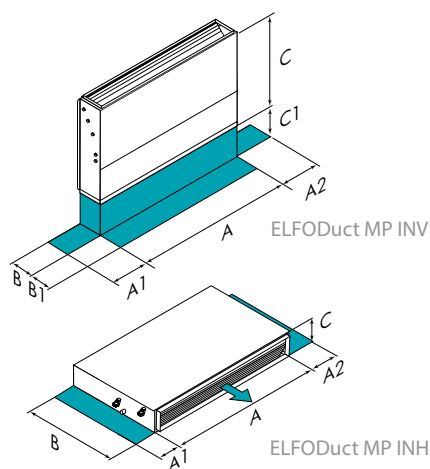


ELFOControl+



DC Motor

dimensions and clearances



Size – ELFODUCT MP			15	21	25	31	41	51	61	71
CC2-INV	A - Length	mm	880	880	880	1280	1280	1280	1680	1680
CC2-INV	B - Width	mm	250	250	250	250	250	250	250	250
CC2-INV	C - Height	mm	600	600	600	600	600	600	600	600
CC2-INV	A1	mm	400	400	400	400	400	400	400	400
CC2-INV	A2	mm	200	200	200	200	200	200	200	200
CC2-INV	B1	mm	250	250	250	250	250	250	250	250
CC2-INV	C1	mm	100	100	100	100	100	100	100	100
CC2-INV	Operating weight	kg	34	35	37	48	50	53	65	68
CC2-INH	A - Length	mm	880	880	880	1280	1280	1280	1680	1680
CC2-INH	B - Width	mm	575	575	575	575	575	575	575	575
CC2-INH	C - Height	mm	250	250	250	250	250	250	250	250
CC2-INH	A1	mm	400	400	400	400	400	400	400	400
CC2-INH	A2	mm	200	200	200	200	200	200	200	200
CC2-INH	Operating weight	kg	34	35	37	48	50	53	65	68
CC4-INV	A - Length	mm	880	880	-	1280	1280	1680	1680	-
CC4-INV	B - Width	mm	250	250	-	250	250	250	250	-
CC4-INV	C - Height	mm	600	600	-	600	600	600	600	-
CC4-INV	A1	mm	400	400	-	400	400	400	400	-
CC4-INV	A2	mm	200	200	-	200	200	200	200	-
CC4-INV	B1	mm	250	250	-	250	250	250	250	-
CC4-INV	C1	mm	100	100	-	100	100	100	100	-
CC4-INV	Operating weight	kg	36	37	-	51	53	67	69	-
CC4-INH	A - Length	mm	880	880	-	1280	1280	1680	1680	-
CC4-INH	B - Width	mm	250	250	-	250	250	250	250	-
CC4-INH	C - Height	mm	575	575	-	575	575	575	575	-
CC4-INH	A1	mm	400	400	-	400	400	400	400	-
CC4-INH	A2	mm	200	200	-	200	200	200	200	-
CC4-INH	Operating weight	kg	36	37	-	51	53	67	69	-

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CC2-INV 2 pipes-Vertical uncased version
CC2-INH 2 pipes-Horizontal uncased version
CC4-INV 4-pipe-Vertical uncased version
CC4-INH 4-pipe-Horizontal uncased version

versions and configurations

VERSION:

- **INH** Horizontal uncased version (Standard)
- **INV** Vertical uncased version

WATER FITTINGS:

- **DX** Water fittings to the right (Standard)
- **SX** Water fittings to the left

COIL CONFIGURATION:

- **CC2** Coil configuration for 2-pipe system (Standard)
- **CC4** Coil configuration for 4-pipe system (sizes 15÷21, 31÷61)

RETURN:

- **RP** Rear intake (Standard)
- **R3** Downward air return
- **RF** Front air inlet

technical data

Size – ELFODUCT MP		15	21	25	31	41	51	61	71
2-pipe									
HIGH SPEED									
Airflow	m ³ /h	1.100	1.200	1.150	2.100	2.300	2.200	3.100	2.950
► Cooling capacity	(1) kW	6,01	7,48	8,59	10,30	12,90	15,00	17,20	20,20
Sensible capacity	(1) kW	4,57	5,56	6,16	8,10	9,95	11,10	13,30	14,90
Water flow-rate	(1) l/h	1.034	1.287	1.477	2.219	2.580	2.958	3.474	
Water pressure drop	(1) kPa	28,70	37,80	32,40	21,00	33,10	25,10	23,10	22,00
► Heating capacity	(2) kW	6,55	7,90	8,30	11,70	14,40	15,20	19,40	20,40
Water flow-rate	(2) l/h	1.127	1.359	1.428	2.012	2.477	2.614	3.337	3.509
Water pressure drop	(2) kPa	29,60	36,70	26,30	23,60	35,80	22,30	25,50	19,50
Total power input	W	179	179	179	330	330	330	409	409
MEDIUM SPEED									
Airflow	m ³ /h	913	1.008	978	1.953	2.139	2.068	2.821	2.714
► Cooling capacity	(1) kW	5,35	6,71	7,77	9,85	12,33	14,44	16,22	19,18
Sensible capacity	(1) kW	4,00	4,91	5,49	7,69	9,45	10,62	12,43	14,04
Water flow-rate	(1) l/h	921	1.155	1.336	1.694	2.121	2.483	2.790	3.299
Water pressure drop	(1) kPa	22,80	30,50	26,50	19,20	30,20	23,20	20,50	19,90
► Heating capacity	(2) kW	5,79	7,04	7,46	11,15	13,73	14,59	18,23	19,31
Water flow-rate	(2) l/h	996	1.211	1.283	1.918	2.361	2.510	3.136	3.321
Water pressure drop	(2) kPa	23,20	29,10	21,20	21,40	32,50	20,60	22,50	17,50
Total power input	W	138	138	138	290	290	290	340	340
LOW SPEED									
Airflow	m ³ /h	715	792	782	1.617	1.771	1.760	2.170	2.154
► Cooling capacity	(1) kW	4,60	5,78	6,76	8,76	10,97	13,06	13,79	16,62
Sensible capacity	(1) kW	3,36	4,13	4,67	6,72	8,25	9,46	10,30	11,90
Water flow-rate	(1) l/h	791	994	1.163	1.507	1.887	2.247	2.371	2.859
Water pressure drop	(1) kPa	16,80	22,60	20,10	15,20	23,90	19,00	14,80	14,90
► Heating capacity	(2) kW	4,93	6,01	6,44	9,85	12,12	13,12	15,34	16,58
Water flow-rate	(2) l/h	848	1.033	1.107	1.694	2.085	2.257	2.638	2.852
Water pressure drop	(2) kPa	16,80	21,20	15,80	16,70	25,30	16,60	15,90	12,90
Total power input	W	128	128	128	283	283	283	305	305
No. of supply fans	-	1	1	1	2	2	2	3	3
4-pipe									
HIGH SPEED									
Airflow	m ³ /h	1.050	1.140	-	2.000	2.170	2.670	2.930	-
► Cooling capacity	(1) kW	5,83	7,22	-	9,96	12,40	13,20	16,60	-
Sensible capacity	(1) kW	4,42	5,35	-	7,83	9,53	10,40	12,80	-
Water flow-rate	(1) l/h	1.003	1.242	-	1.713	2.133	2.270	2.855	-
Water pressure drop	(1) kPa	27,00	35,30	-	19,60	30,60	13,20	21,40	-
► Heating capacity	(3) kW	5,88	6,20	-	10,31	10,84	13,78	14,58	-
Water flow-rate	(3) l/h	505	533	-	887	933	1.185	1.254	-
Water pressure drop	(3) kPa	30,70	33,60	-	27,90	30,40	25,90	28,40	-
Total power input	W	175	175	-	330	330	409	409	-
MEDIUM SPEED									
Airflow	m ³ /h	893	980	-	1.880	2.040	2.456	2.725	-
► Cooling capacity	(1) kW	5,27	6,57	-	9,59	11,93	12,53	15,87	-
Sensible capacity	(1) kW	3,94	4,80	-	7,49	9,12	9,80	12,15	-
Water flow-rate	(1) l/h	907	1.131	-	1.649	2.053	2.156	2.730	-
Water pressure drop	(1) kPa	22,10	29,20	-	18,20	28,30	11,90	19,60	-
► Heating capacity	(3) kW	5,28	5,61	-	9,90	10,41	13,04	13,90	-
Water flow-rate	(3) l/h	454	482	-	851	895	1.121	1.195	-
Water pressure drop	(3) kPa	24,80	27,50	-	25,70	28,00	23,20	25,80	-
Total power input	W	138	138	-	290	290	340	340	-
LOW SPEED									
Airflow	m ³ /h	704	775	-	1.600	1.758	1.922	2.168	-
► Cooling capacity	(1) kW	4,55	5,68	-	8,67	10,88	10,77	13,77	-
Sensible capacity	(1) kW	3,32	4,06	-	6,67	8,20	8,22	10,32	-
Water flow-rate	(1) l/h	783	978	-	1.492	1.872	1.852	2.369	-
Water pressure drop	(1) kPa	16,50	21,90	-	14,90	23,50	8,80	14,80	-
► Heating capacity	(3) kW	4,52	4,80	-	8,90	9,44	11,09	11,95	-
Water flow-rate	(3) l/h	388	413	-	765	812	954	1.028	-
Water pressure drop	(3) kPa	18,10	20,20	-	20,80	23,00	16,80	19,10	-
Total power input	W	128	128	-	283	283	305	305	-
No. of supply fans	-	1	1	-	2	2	3	3	-
Standard power supply	V	220-240/1/50							
Type of supply fan	(4) -	CFG							
H Sound pressure level	(5) dB(A)	58	59	59	62	63	63	62	62
M Sound pressure level	(5) dB(A)	53	54	54	60	61	61	59	59
L Sound pressure level	(5) dB(A)	47	48	48	54	55	55	52	52
H Sound power level	(5) dB(A)	69	70	70	73	74	74	73	73
M Sound power level	(5) dB(A)	64	65	65	71	72	72	70	70
L Sound power level	(5) dB(A)	58	59	59	65	66	66	63	63

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Airflow with free outlet (0 Pa static pressure)

- (1) Entering exchanger water 7°C (temperature differential 5°C) - Ambient air 27°C D.B. / 19°C W.B.
- (2) Entering exchanger water 45°C (temperature differential 5°C) - Ambient air 20°C

(3) Entering exchanger water 65°C (temperature differential 10°C) - Ambient air 20°C

(4) CFG = AC centrifugal fan

(5) Sound levels tested in anechoic chamber and referring to units for 2-pipe systems. The sound pressure level refers to 1 m from the external surface of the unit operating in the open field.

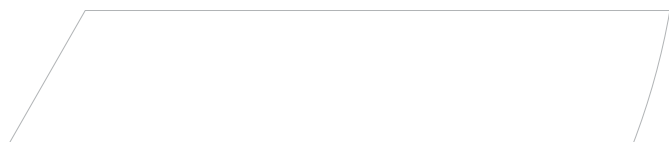
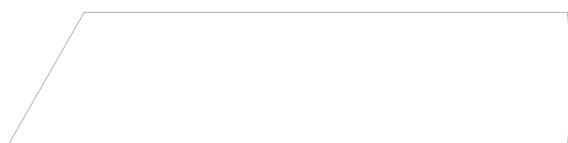
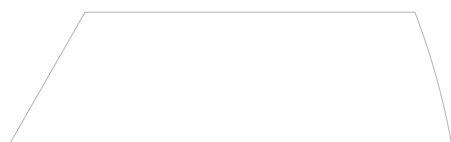
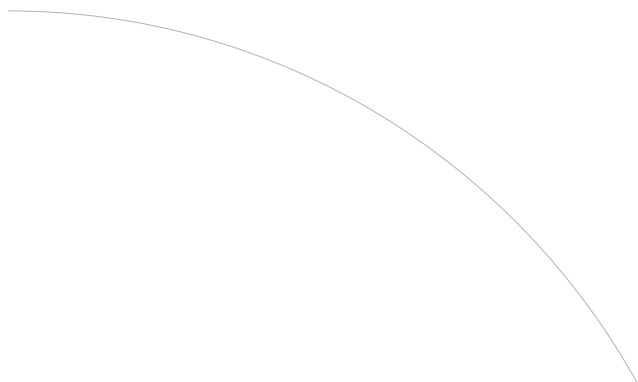
accessories

► VEC	High efficiency EC fan	► SFCF	Air filter section (ductable) with EU3 flat air filter (Eurovent 4/5)
► TRM	Terminal block with minimum water temperature clickson	■ SFCFX	Air filter section (ductable) with EU3 flat air filter (Eurovent 4/5)
► TRP	Terminal block with closing cover IP40	■ SFHEX	Air filter section (ductable) with EU5 air filter (Eurovent 4/5)
► TRMP	Terminal block with closing cover IP40 and minimum water temperature clickson	■ HIDE2X	Remote control with E/1 +3V +on/off for wall installation
► CTSP1	CLIVET TALK TERMINAL SPACE electronics with RS485 Modbus serial port	■ HIDE3X	Plurifunctional remote control for wall installation
► CPVM	Control additional card of 0-10V valve and EC fan (available only with options: CTSP1)	■ HIDE4X	Plurifunctional room control for 0-10V valves
► 2V2	ON/OFF 2-way valve kit for 2-pipe system	■ HIDT2X	HID-T2 electronic room control
■ 2V2X	ON/OFF 2-way valve kit for 2-pipe system	■ HIDT3X	HID-T3 electronic room control
► 2V4	ON/OFF 2-way valve kit for 4-pipe system (sizes 015.0÷021.0, 031.0÷061.0)	■ HIDT18X	HIDT18X electronic room control for wall installation
■ 2V4X	ON/OFF 2-way valve kit for 4-pipe system (sizes 015.0÷021.0, 031.0÷061.0)	■ PTABX	Remote probe for room air temperature for electromechanical thermostats.
► 3V2	3-way valve kit for 2-pipe type "on/off" system	■ DCPX	Control device for more units with a single room control.
■ 3V2X	3-way valve kit for 2-pipe type "on/off" system	■ EH230X	Heating section with electrical heaters 230V with safety thermostat
► 3V4	3-way valve kit for 4-pipe system type "on/off" (sizes 015.0÷021.0, 031.0÷061.0)	■ EH400X	Heating section with electrical heaters 400V with safety thermostat
■ 3V4X	3-way valve kit for 4-pipe system type "on/off" (sizes 015.0÷021.0, 031.0÷061.0)	► RE700	0.7 kW integrated electric heater with safety thermostat and power electric panel
► 10V4	0-10V 3-way valve kit for 4-pipe system (sizes 015.0÷021.0, 031.0÷061.0)	► RE1000	1.0 kW integrated electric heater with safety thermostat and power electric panel
■ 10V4X	0-10V 3-way valve kit for 4-pipe system (sizes 015.0÷021.0, 031.0÷061.0)	► RE1500	1.5 kW integrated electric heater with safety thermostat and power electric panel
► 10V2	0-10V 3-way valve kit for 2-pipe system	► RE2000	2.0 kW integrated electric heater with safety thermostat and power electric panel
■ 10V2X	0-10V 3-way valve kit for 2-pipe system	■ MCRX	Mixing and recirculating chamber
■ KIB22X	Water and balancing kit for 2-way valve and 2-pipe installation	■ PR90AX	90° air intake plenum
■ KIB24X	Water and balancing kit for 2-way valve and 4-pipe installation (sizes 015.0÷021.0, 031.0÷061.0)	■ PCCRIX	Air intake plenum with circular fittings
■ KIB32X	Water and balancing kit for 3-way valve and 2-pipe installation	■ PGFRIX	Air intake plenum with flexible joint
■ KIB34X	Water and balancing kit for 3-way valve and 4-pipe installation (sizes 015.0÷021.0, 031.0÷061.0)	■ PMAX	Straight section for both air intake / supply outlets
► BRO	Auxiliary drain pan in galvanized steel with thermal insulation	■ P90MAX	90° section for air supply outlet
■ BROX	Auxiliary drain pan in galvanized steel with thermal insulation	■ PCCMAX	Section with spigots "Ø" with variable diameter and internal insulation for air supply outlet
► BRV	Auxiliary condensate collection pan (vertical installation)	■ PGFMAX	Anti-vibration section for supply outlet
■ BRVX	Auxiliary condensate collection pan (vertical installation)	■ SILMAX	Labyrinth noise level attenuator section for both air intake / supply outlets
► CDP	Condensate drain pump	■ CUFMX	Air outlet casing with bird-proof grill
■ CDPX	Condensate drain pump	■ CUFAX	Air intake casing with bird-proof grill and EU3 air filter (Eurovent 4/5)
► FAPS	EU3 flat air filter (Eurovent 4/5) not ductable	■ S230X	ON/OFF 230V servomotor for mixing and recirculation chamber
■ FAPSX	EU3 flat air filter (Eurovent 4/5) not ductable	■ GMX	Outlet grille
		■ GRAX	Return grille with filter
		■ TMX	Hot water min. temperature thermostat

Key to symbols and notes

■ Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.



Water terminal unit

Uncased horizontal and vertical indoor installation
Ductable

Capacity from 6,8 to 25,5 kW

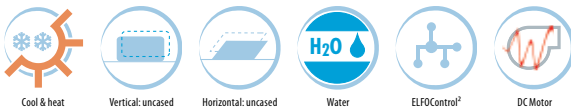


ELFODuct

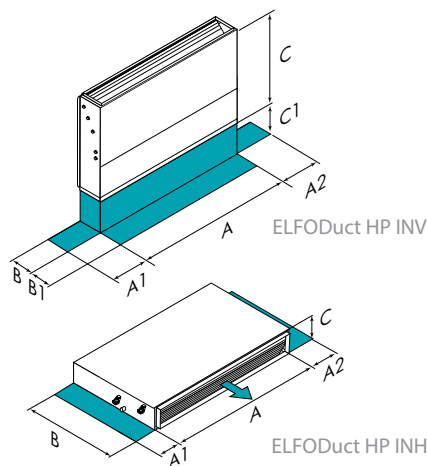
The **ELFODuct HP** are the new generation air-treatment water terminal units ideal for installations where ducted air distribution is necessary. The units are designed for installation in suspended ceilings or lining walls and are characterized by their compactness and extremely low noise levels. The advantages of the new series are: Version for 2 and 4-pipe systems;

- Version for horizontal installations in suspended ceilings and version for vertical installations in lining walls;
- High energy efficiency thanks to the configuration with fan deck with DC Brushless motor;
- Available head up to **150 Pa**;
- Very low sound levels;
- Internal exchanger with large exchange surface, easily reversed water connections even on construction site;
- Complete accessories range for the full installation;
- Complete range of electromechanical and electronic thermostats and serial port RS485 with MODBUS protocol.

functions and features



dimensions and clearances



CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size – ELFODUCT HP			015.0	021.0	025.0	031.0	041.0	051.0	061.0	071.0
CC2-INV	A - Length	mm	880	880	880	1280	1280	1280	1680	1680
CC2-INV	B - Width	mm	275	275	275	275	275	275	275	275
CC2-INV	C - Height	mm	650	650	650	650	650	650	650	650
CC2-INV	A1	mm	400	400	400	400	400	400	400	400
CC2-INV	A2	mm	200	200	200	200	200	200	200	200
CC2-INV	B1	mm	250	250	250	250	250	250	250	250
CC2-INV	C1	mm	100	100	100	100	100	100	100	100
CC2-INV	Operating weight	kg	37	38	40	52	54	57	70	73
CC2-INH	A - Length	mm	880	880	880	1280	1280	1280	1680	1680
CC2-INH	B - Width	mm	625	625	625	625	625	625	625	625
CC2-INH	C - Height	mm	275	275	275	275	275	275	275	275
CC2-INH	A1	mm	400	400	400	400	400	400	400	400
CC2-INH	A2	mm	200	200	200	200	200	200	200	200
CC2-INH	Operating weight	kg	37	38	40	52	54	57	70	73
CC4-INV	A - Length	mm	880	880	-	1280	1280	1680	1680	-
CC4-INV	B - Width	mm	275	275	-	275	275	275	275	-
CC4-INV	C - Height	mm	650	650	-	650	650	650	650	-
CC4-INV	A1	mm	400	400	-	400	400	400	400	-
CC4-INV	A2	mm	200	200	-	200	200	200	200	-
CC4-INV	B1	mm	250	250	-	250	250	250	250	-
CC4-INV	C1	mm	100	100	-	100	100	100	100	-
CC4-INV	Operating weight	kg	40	41	-	56	58	73	75	-
CC4-INH	A - Length	mm	880	880	-	1280	1280	1680	1680	-
CC4-INH	B - Width	mm	625	625	-	625	625	625	625	-
CC4-INH	C - Height	mm	275	275	-	275	275	275	275	-
CC4-INH	A1	mm	400	400	-	400	400	400	400	-
CC4-INH	A2	mm	200	200	-	200	200	200	200	-
CC4-INH	Operating weight	kg	40	41	-	56	58	73	75	-

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CC2-INV 2 pipes-Vertical uncased version
CC2-INH 2 pipes-Horizontal uncased version
CC4-INV 4-pipe-Vertical uncased version
CC4-INH 4-pipe-Horizontal uncased version

versions and configurations

VERSION:

- **INH** Horizontal uncased version (Standard)
- **INV** Vertical uncased version

WATER FITTINGS:

- **DX** Water fittings to the right (Standard)
- **SX** Water fittings to the left

COIL CONFIGURATION:

- **CC2** Coil configuration for 2-pipe system (Standard)
- **CC4** Coil configuration for 4-pipe system (sizes 015.0÷021.0, 031.0÷061.0)

RETURN:

- **RP** Rear intake (Standard)
- **R3** Downward air return
- **RF** Front air inlet

technical data

Size – ELFODUCT HP		015.0	021.0	025.0	031.0	041.0	051.0	061.0	071.0
2-pipe									
HIGH SPEED									
Airflow	m ³ /h	1.350	1.500	1.450	2.750	3.000	2.850	4.400	4.200
► Cooling capacity	(1) kW	6,82	8,65	10,10	12,00	15,20	17,80	21,20	25,50
Sensible capacity	(1) kW	5,30	6,58	7,38	9,78	12,10	13,50	17,20	19,40
Water flow-rate	(1) l/h	1.173	1.488	1.737	2.064	2.614	3.062	3.646	4.386
Water pressure drop	(1) kPa	35,80	39,50	38,50	28,10	38,40	30,70	29,80	25,10
► Heating capacity	(2) kW	7,60	9,45	10,00	14,20	17,60	18,60	25,15	26,85
Water flow-rate	(2) l/h	1.307	1.625	1.720	2.442	3.027	3.199	4.326	4.618
Water pressure drop	(2) kPa	38,60	40,90	32,80	34,10	44,70	29,10	36,40	24,10
Total power input	W	212	212	212	390	390	390	570	570
MEDIUM SPEED									
Airflow	m ³ /h	1.080	1.200	1.175	2.448	2.670	2.537	4.048	3.906
► Cooling capacity	(1) kW	5,94	7,53	8,87	11,17	14,14	16,56	20,13	24,38
Sensible capacity	(1) kW	4,52	5,61	6,35	9,00	11,13	12,42	16,20	18,42
Water flow-rate	(1) l/h	1.021	1.296	1.525	1.920	2.432	2.849	3.463	4.193
Water pressure drop	(1) kPa	27,10	29,90	29,70	24,30	33,20	26,50	26,80	22,90
► Heating capacity	(2) kW	6,56	8,16	8,71	13,15	16,30	17,23	23,81	25,60
Water flow-rate	(2) l/h	1.128	1.403	1.497	2.262	2.803	2.963	4.095	4.403
Water pressure drop	(2) kPa	28,70	30,50	24,80	29,30	38,30	24,90	32,60	21,90
Total power input	W	170	170	170	280	280	280	520	520
LOW SPEED									
Airflow	m ³ /h	783	885	870	1.540	1.680	1.625	3.036	2.982
► Cooling capacity	(1) kW	4,87	6,24	7,36	8,38	10,61	12,57	16,84	20,62
Sensible capacity	(1) kW	3,59	4,51	5,12	6,46	7,99	9,03	13,19	15,18
Water flow-rate	(1) l/h	837	1.073	1.266	1.441	1.825	2.161	2.897	3.547
Water pressure drop	(1) kPa	18,20	20,50	20,40	13,70	18,70	15,30	18,80	16,40
► Heating capacity	(2) kW	5,31	6,68	7,14	9,69	12,01	12,85	19,69	21,43
Water flow-rate	(2) l/h	913	1.148	1.228	1.667	2.066	2.209	3.387	3.685
Water pressure drop	(2) kPa	18,80	20,40	16,70	15,90	20,80	13,90	22,30	15,40
Total power input	W	128	128	128	175	175	175	430	430
No. of supply fans	-	1	1	1	2	2	2	3	3
4-pipe									
HIGH SPEED									
Airflow	m ³ /h	1.270	1.400	-	2.570	2.800	3.800	4.100	-
► Cooling capacity	(1) kW	6,57	8,28	-	11,50	14,60	16,10	20,30	-
Sensible capacity	(1) kW	5,07	6,25	-	9,33	11,50	13,30	16,40	-
Water flow-rate	(1) l/h	1.130	1.424	-	1.978	2.511	2.769	3.492	-
Water pressure drop	(1) kPa	33,20	36,20	-	25,80	35,40	19,50	27,20	-
► Heating capacity	(3) kW	10,76	11,47	-	19,82	20,98	28,36	29,87	-
Water flow-rate	(3) l/h	925	986	-	1.705	1.804	2.439	2.569	-
Water pressure drop	(3) kPa	28,70	31,80	-	26,20	28,80	24,10	26,20	-
Total power input	W	212	212	-	390	390	570	570	-
MEDIUM SPEED									
Airflow	m ³ /h	1.041	1.162	-	2.262	2.492	3.534	3.854	-
► Cooling capacity	(1) kW	5,81	7,38	-	10,63	13,58	15,39	19,54	-
Sensible capacity	(1) kW	4,40	5,47	-	8,52	10,58	12,63	15,69	-
Water flow-rate	(1) l/h	999	1.269	-	1.827	2.336	2.647	3.360	-
Water pressure drop	(1) kPa	25,90	28,70	-	22,00	30,60	17,90	25,20	-
► Heating capacity	(3) kW	9,44	10,14	-	18,22	19,43	27,03	28,67	-
Water flow-rate	(3) l/h	811	872	-	1.567	1.671	2.325	2.466	-
Water pressure drop	(3) kPa	22,10	24,90	-	22,10	24,70	21,90	24,20	-
Total power input	W	170	170	-	280	280	520	520	-
LOW SPEED									
Airflow	m ³ /h	775	854	-	1.465	1.624	2.736	2.993	-
► Cooling capacity	(1) kW	4,84	6,09	-	8,12	10,42	13,13	16,70	-
Sensible capacity	(1) kW	3,56	4,39	-	6,24	7,79	10,51	13,09	-
Water flow-rate	(1) l/h	832	1.048	-	1.396	1.791	2.259	2.873	-
Water pressure drop	(1) kPa	18,00	19,60	-	12,80	18,00	13,00	18,40	-
► Heating capacity	(3) kW	7,77	8,28	-	13,69	14,65	22,84	24,27	-
Water flow-rate	(3) l/h	668	712	-	1.177	1.260	1.964	2.087	-
Water pressure drop	(3) kPa	15,00	16,60	-	12,50	14,10	15,60	17,30	-
Total power input	W	128	128	-	175	175	430	430	-
No. of supply fans	-	1	1	-	2	2	3	3	-
Standard power supply	V	220-240/1/50							
Type of supply fan	-	CFG							
H Sound pressure level	(5) dB(A)	58	59	59	61	65	62	63	63
M Sound pressure level	(5) dB(A)	52	53	53	57	58	58	62	62
L Sound pressure level	(5) dB(A)	44	45	45	46	47	47	57	57
H Sound power level	(5) dB(A)	69	70	70	72	73	73	74	74
M Sound power level	(5) dB(A)	63	64	64	68	69	69	73	73
L Sound power level	(5) dB(A)	55	56	56	57	58	58	68	68

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Airflow with free outlet (0 Pa static pressure)

- (1) Entering exchanger water 7°C (temperature differential 5°C) - Ambient air 27°C D.B. / 19°C W.B.
- (2) Entering exchanger water 45°C (temperature differential 5°C) - Ambient air 20°C

(3) Entering exchanger water 65°C (temperature differential 10°C) - Ambient air 20°C

(4) CFG = AC centrifugal fan

(5) Sound levels tested in anechoic chamber and referring to units for 2-pipe systems. The sound pressure level refers to 1 m from the external surface of the unit operating in the open field.

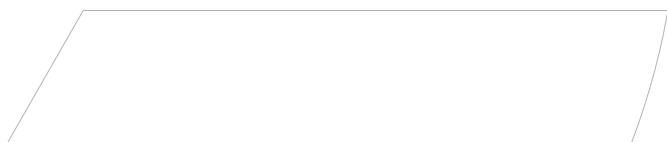
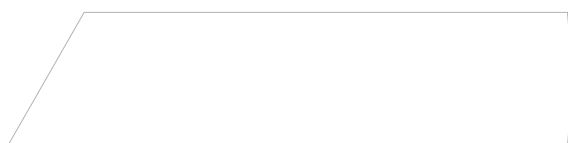
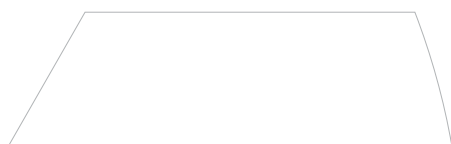
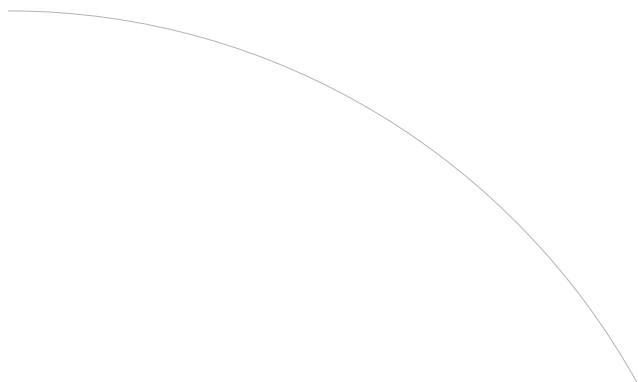
accessories

► VEC	High efficiency EC fan	► SFHEX	Air filter section (ductable) with EU5 air filter (Eurovent 4/5)
► TRM	Terminal block with minimum water temperature clickson	► HIDE2X	Remote control with E/I +3V +on/off for wall installation
► TRP	Terminal block with closing cover IP40	► HIDE3X	Plurifunctional room control for wall installation
► TRMP	Terminal block with closing cover IP40 and minimum water temperature clickson	► HIDE4X	Plurifunctional room control for 0-10V valves
► CTSP1	CLIVET TALK TERMINAL SPACE electronics with RS485 Modbus serial port	► HIDT2X	HID-T2 electronic room control
► CPVM	Control additional card of 0-10V valve and EC fan (available only with options: CTSP1)	► HIDT3X	HID-T3 electronic room control
► 2V2	ON/OFF 2-way valve kit for 2-pipe system	► HIDT18X	HIDT18X electronic room control for wall installation
■ ► 2V2X	ON/OFF 2-way valve kit for 2-pipe system	► PTABX	Remote probe for room air temperature for electromechanical thermostats.
► 2V4	ON/OFF 2-way valve kit for 4-pipe system (sizes 015.0÷021.0, 031.0÷061.0)	► DCPX	Control device for more units with a single room control.
■ ► 2V4X	ON/OFF 2-way valve kit for 4-pipe system (sizes 015.0÷021.0, 031.0÷061.0)	► EH2QX	Heating section with 230v electric heaters, safety thermostat and power electric panel
► 3V2	3-way valve kit for 2-pipe type "on/off" system	► EH4QX	Heating section with 400v electric heaters, safety thermostat and power electric panel
■ ► 3V2X	3-way valve kit for 2-pipe type "on/off" system	► RE700	0.7 kW integrated electric heater with safety thermostat and power electric panel
► 3V4	3-way valve kit for 4-pipe system type "on/off" (sizes 015.0÷021.0, 031.0÷061.0)	► RE1000	1.0 kW integrated electric heater with safety thermostat and power electric panel
■ ► 3V4X	Three-way valve kit for 4-pipe system type "on/off" (sizes 015.0÷021.0, 031.0÷061.0)	► RE1500	1.5 kW integrated electric heater with safety thermostat and power electric panel
► 10V4	0-10V 3-way valve kit for 4-pipe system (sizes 015.0÷021.0, 031.0÷061.0)	► RE2000	2.0 kW integrated electric heater with safety thermostat and power electric panel
■ ► 10V4X	0-10V 3-way valve kit for 4-pipe system (sizes 015.0÷021.0, 031.0÷061.0)	► MCRX	Mixing and recirculating chamber
► 10V2	0-10V 3-way valve kit for 2-pipe system	► PR90AX	90° air intake plenum
■ ► 10V2X	0-10V 3-way valve kit for 2-pipe system	► PCCRIX	Air intake plenum with circular fittings
■ ► KIB22X	Water and balancing kit for 2-way valve and 2-pipe installation	► PGFRIX	Air intake plenum with flexible joint
■ ► KIB24X	Water and balancing kit for 2-way valve and 4-pipe installation (sizes 015.0÷021.0, 031.0÷061.0)	► PMAX	Straight section for both air intake / supply outlets
■ ► KIB32X	Water and balancing kit for 3-way valve and 2-pipe installation	► P90MAX	90° section for air supply outlet
■ ► KIB34X	Water and balancing kit for 3-way valve and 4-pipe installation (sizes 015.0÷021.0, 031.0÷061.0)	► PCCMAX	Section with spigots "Ø" with variable diameter and internal insulation for air supply outlet
► BRO	Auxiliary drain pan in galvanized steel with thermal insulation	► PGFMAX	Anti-vibration section for supply outlet
■ ► BROX	Auxiliary drain pan in galvanized steel with thermal insulation	► SILMAX	Labyrinth noise level attenuator section for both air intake / supply outlets
► BRV	Auxiliary condensate collection pan (vertical installation)	► CUFMX	Air outlet casing with bird-proof grill
■ ► BRVX	Auxiliary condensate collection pan (vertical installation)	► CUFAX	Air intake casing with bird-proof grill and EU3 air filter (Eurovent 4/5)
► CDP	Condensate drain pump	► S230X	On-off 230v servomotor for mixing and recirculation chamber
► CDPX	Condensate drain pump	► GMX	Outlet grille
► FAPS	EU3 flat air filter (Eurovent 4/5) not ductable	► GRAX	Return grille with filter
■ ► FAPSX	EU3 flat air filter (Eurovent 4/5) not ductable	► TMX	Hot water min. temperature thermostat
► SFCF	Air filter section (ductable) with EU3 flat air filter (Eurovent 4/5)		
■ ► SFCFX	Air filter section (ductable) with EU3 flat air filter (Eurovent 4/5)		

Key to symbols and notes

- Accessories separately supplied

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.



Water terminal unit

Uncased horizontal indoor installation

Ductable

Capacity from 29,7 to 83,8 kW

Room control HID-T2 for wall-mounted remote installation with functions of: - manual or automatic summer/winter switching - temperature setting - manual setting of fan speed - other useful functions.

**functions and features**

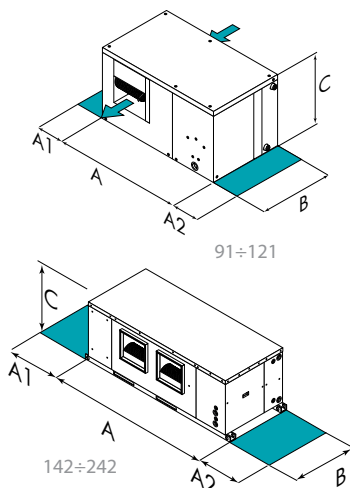
Cool & heat



Horizontal: uncased



Water

ELFOControl²**dimensions and clearances**

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

ELFODuct

The **ELFODuct CF** units are ideal air-treatment terminal units for installations where ducted air distribution is necessary.

They are designed for installation in suspended ceilings and are distinguished by their **compactness** and extremely low noise levels obtained thanks to both internal and external insulation.

The main features are:

- ▶ **various available controls**, from simple speed control through to the electronic control set-up for connection to ELFOControl² or general supervisors;
- ▶ available in version for **2 and 4-pipe systems**;
- ▶ **wide choice of aeraulic accessories** (plenum for round ducts, fresh air intake plenum);
- ▶ **electric heater section** with different power plus electronic power modulation control;
- ▶ **high head-pressure fans** for ducted air distribution.

Size – CF		91	121	142	162	182	202	242
A - Length	mm	1285	1435	2010	2010	2010	2510	2510
B - Width	mm	945	1030	750	750	750	850	850
C - Height	mm	585	685	630	630	630	680	680
A1	mm	200	200	500	500	500	500	500
A2	mm	400	400	500	500	500	500	500
Operating weight	kg	138	158	170	190	195	253	265

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

VOLTAGE:

- ▶ **400T** Supply voltage 400/3/50 without neutral (Standard)
- ▶ **230T** Supply voltage 230/3/50

AIRFLOW:

- ▶ **SM** Standard air outlet flow-rate (Standard)
- ▶ **RM** Reduced air outlet flow-rate

WATER FITTINGS:

- ▶ **DX** Water fittings to the right (sizes 182÷202)
- ▶ **SX** Water fittings to the left (sizes 182÷202)

HOT WATER COIL:

- ▶ **-** Hot water coil: not required (Standard)
- ▶ **CHW2** Two-rows hot water coil
- ▶ **CHW2X** Two-rows hot water coil (sizes 91÷121)
- ▶ **CHW3** 3 rows hot water coil (sizes 91÷121)
- ▶ **CHW3X** 3 rows hot water coil (sizes 91÷121)

technical data

Size – CF			91	121	142	162	182	202	242
▶ Cooling capacity	(1)	kW	29,7	40,3	46,9	52,4	59,0	75,2	83,8
Sensible capacity	(1)	kW	22,1	29,7	33,6	38,0	42,5	52,7	59,5
Total power input	(1)	kW	0,75	1,10	1,10	1,50	1,50	2,20	3,00
▶ Heating capacity	(2)	kW	35,1	47,2	53,2	60,3	76,0	83,4	94,3
Supply airflow	(3)	l/s	1417	1889	2120	2500	2660	3100	3620
Type of supply fan	(4)	-	CFG						
Number of supply fans		Nr	1	1	2	2	2	2	2
Max. static pressure supply fan	(3)	Pa	150	150	90	90	60	120	210
Standard power supply		V	400/3~/50						
Sound pressure level	(5)	dB(A)	65,3	66,1	68,8	72,6	73,9	70,0	72,2

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

- (1) Ambient temperature 27°C/19 WB; Water inlet 7°C and outlet 12°C
- (2) Ambient air at 20°C D.B.; water at inlet 50°C and outlet 40°C
- (3) Rated flow, maximum speed, including the air filter

(4) CFG = centrifugal fan

(5) The sound levels refer to units ceiling installed without false ceiling, with nominal air flow, fan supply 400/3/50, damper on the fan discharge and 1 m. of ducting suction and discharge. Sound pressure levels referred to 1 m. from units external surface operating in free field conditions.

accessories

- ▶ **MMF2** 1,1 kW supply fan electric motor (sizes 91÷162)
- ▶ **MMF3** 1,5 kW supply fan electric motor (sizes 121÷242)
- ▶ **MMF4** 2,2 kW supply fan electric motor (sizes 142÷242)
- ▶ **MMF5** 3 kW supply fan electric motor (sizes 182÷242)
- ▶ **MMF6** 4 kW supply fan electric motor (sizes 242)
- ▶ **FCS** Angular air filter section.
- **FCSX** Angular air filter section. (sizes 91÷121)
- ▶ **EH09** 4,5 kW electric heaters (sizes 91÷121)
- **EH09X** 4,5 kW electric heaters (sizes 91÷121)
- ▶ **EH10** 6 kW electric heaters (sizes 91÷121)
- **EH10X** 6 kW electric heaters (sizes 91÷121)
- ▶ **EH12** 9 kW electric heaters (sizes 91÷121)
- **EH12X** 9 kW electric heaters (sizes 91÷121)
- ▶ **EH14** 12 kW electric heaters (sizes 91÷121)
- **EH14X** 12 kW electric heaters (sizes 91÷121)
- ▶ **EH17** 18 kW electric heaters
- **EH17X** 18 kW electric heaters (sizes 91÷121)
- ▶ **EH20** 24 kW electric heaters (sizes 142÷242)
- **MCRX** Mixing and recirculating chamber (sizes 91÷121)
- **10V2X** 0-10V 3-way valve kit for 2-pipe system
- **10V4X** 0-10V 3 way valve kit for 4-pipe system
- **AMRX** Rubber antivibration mounts
- ▶ **CQEP** Capacity electrical panel
- ▶ **CTS** CLIVET TALK TERMINAL electronic for HID-T2 or HID-T3 thermostats (ELFOControl)
- **HIDT2X** HID-T2 electronic room control
- **HIDT3X** HID-T3 electronic room control
- ▶ **SP1** RS485 remote communication serial port
- **SP1X** RS485 remote communication serial port

Key to symbols:

- Accessories separately supplied

Water terminal unit

Cased vertical indoor installation

Ductable

Capacity from 13,6 to 89 kW

Room control HID-T2 for wall-mounted remote installation with functions of: - manual or automatic summer/winter switching - temperature setting - manual setting of fan speed - other useful functions.

**functions and features**

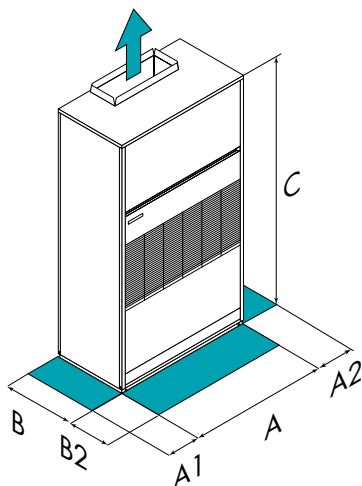
Cool & heat



Vertical-cased



Water

ELFOControl²**dimensions and clearances**

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

ELFODuct

The **ELFODuct CF-V** tall water terminal units have been designed for installation directly in the room or in technical spaces.

The units have been designed for **sending air directly into the room or with ducted distribution**. They are distinguished by their compactness and extremely low noise levels obtained thanks to internal soundproofing.

The main features are:

- ▶ **various available controls**, from simple speed control through to the electronic **control set-up for connection to ELFOControl** or general supervisors;
- ▶ **available in version for 2 and 4-pipe systems**;
- ▶ **choice of aeraulic accessories** (plenum for front air supply or on three sides);
- ▶ **electric heater section** with different power plus electronic power modulation control;
- ▶ **fans available with high static pressure**, which allow extensive ducting;
- ▶ **front air return** through grille (standard) or with return **from the floor or from the rear**

Size – CF-V		31	41	51	71	91	101	121	142	182	202	242
A - Length	mm	650	850	850	1050	1050	1250	1250	1870	1870	2070	2070
B - Width	mm	500	500	500	500	670	670	670	670	670	670	670
C - Height	mm	1700	1700	1700	1700	2000	2000	2000	2000	2000	2000	2000
A1	mm	400	400	400	400	400	400	400	400	400	400	400
A2	mm	400	400	400	400	400	400	400	400	400	400	400
B2	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Operating weight	kg	96	117	123	140	185	210	215	250	260	290	295

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

VOLTAGE:

- ▶ **400T** Supply voltage 400/3/50 without neutral (sizes 91÷242 only, Standard)
- ▶ **230M** Supply voltage 230/1/50 (sizes 31÷71)
- ▶ **230T** Supply voltage 230/3/50 (sizes 91÷242)

AIRFLOW:

- ▶ **SM** Standard air outlet flow-rate (sizes 91÷242 only, Standard)
- ▶ **RM** Reduced air outlet flow-rate (sizes 91÷242)

HOT WATER COIL:

- ▶ **-** Hot water coil: not required (Standard)
- ▶ **CHW2** Two-rows hot water coil

technical data

Size – CF-V			31	41	51	71	91	101	121	142	182	202	242
▶ Cooling capacity	(1)	kW	13,6	19,1	21,6	27,9	36,9	44,0	48,7	65,5	75,4	83,6	89,0
Sensible capacity	(1)	kW	9,82	13,7	15,7	20,3	26,5	31,8	35,6	47,1	54,9	60,2	64,9
Total power input	(1)	kW	0,30	0,30	0,50	0,60	0,80	1,10	1,50	1,50	2,20	2,20	3,00
▶ Heating capacity	(2)	kW	13,1	18,1	20,9	26,2	35,9	42,3	46,6	62,0	71,4	78,4	85,7
Supply airflow	(3)	l/s	569	778	944	1166	1597	1889	2167	2638	3194	3472	3888
Type of supply fan	(4)	-	CGF										
Number of supply fans		Nr	1	1	1	2	1	1	1	2	2	2	2
Max. static pressure supply fan	(5)	Pa	85	93	80	70	140	170	180	140	115	145	180
Standard power supply		V	230/1/50					400/3/50					
ST Sound pressure level	(6)	dB(A)	48	49	50	51	53	56	58	58	60	62	64

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

- (1) Water inlet 7°C and outlet 12°C; Ambient temperature 27°C/19 WB; Relative humidity 50%
- (2) Water inlet 45°C and outlet 40°C; Ambient temperature 20°C DB; Relative humidity 50%
- (3) Max external static pressure

- (4) CFG = centrifugal fan
- (5) Rated flow, maximum speed, including the air filter
- (6) The sound levels refer to the unit at full load, in the rated test conditions and with available head of 30Pa. The sound pressure level refers to unit with ductable outlet and it is measured at a distance of 1m from the external surface of the units.
- ST Standard (ST)

accessories

- **POFX** Front air discharge plenum
- **PO3X** Air supply plenum on three sides
- **10V2X** 0-10V 3-way valve kit for 2-pipe system
- **10V4X** 0-10V 3 way valve kit for 4-pipe system
- ▶ **EH09** 4,5 kW electric heaters
- ▶ **EH10** 6 kW electric heaters (sizes 41÷242)
- ▶ **EH12** 9 kW electric heaters
- ▶ **EH14** 12 kW electric heaters (sizes 41÷242)
- ▶ **EH17** 18 kW electric heaters (sizes 71÷242)
- ▶ **EH20** 24 kW electric heaters (sizes 142÷242)
- ▶ **MMF2** 1,1 kW supply fan electric motor (sizes 91÷101)

- ▶ **MMF3** 1,5 kW supply fan electric motor (sizes 101÷142)
- ▶ **MMF4** 2,2 kW supply fan electric motor (sizes 121÷202)
- ▶ **MMF5** 3 kW supply fan electric motor (sizes 182÷242)
- ▶ **MMF6** 4 kW supply fan electric motor (sizes 242)
- ▶ **MOD** Double-speed motor (sizes 91÷242)
- ▶ **CV3FS** Electronic version with 3-speed board for the fan (sizes 31÷71)
- ▶ **CTS** CLIVET TALK TERMINAL electronic for HID-T2 or HID-T3 thermostats (ELFOControl)
- **HIDT2X** HID-T2 electronic room control
- **HIDT3X** HID-T3 electronic room control
- ▶ **SP1** RS485 remote communication serial port
- **SP1X** RS485 remote communication serial port

Key to symbols:

- Accessories separately supplied

Air conditioning unit

For the air treatment

At modular sections

Indoor and outdoor installation

Air flow from 350 to 44400 l/s



Unit listed on
www.eurovent-certification.com



ErP compliant

The **AQX** air-handling units feature:

- ▶ basic modular series developed on 32 standard sizes with constant coverage from 2.2 m/s to 2.52 m/s;
- ▶ the high level of engineering of the AQX series allows, along with the 32 standard sizes, to set different frontal dimensions in order to meet specific size requirements for construction sites and handling needs, with a 50 mm pitch both in terms of height and depth;
- ▶ aluminium alloy frame with an exclusive design;
- ▶ thermal cut as standard on sections and joints between sections;
- ▶ concealed intermediate sections;
- ▶ thermally cut sandwich buffer panels, 50mm thick with thermoacoustic insulation made with injected polyurethane (40 kg/m³) or mineral wool (90 kg/m³);
- ▶ the internal and external sheet metal of the panels can be selected among 7 types of material with different thicknesses;
- ▶ handles for inspection doors that can also be opened from the inside;
- ▶ absolutely smooth internal surfaces to minimise dust deposits and make cleaning and disinfection easier;
- ▶ antivibration bellow supplied as standard on the fans' intake;
- ▶ the AQX units can be equipped with a vast array of filtering solutions starting from simple G2 undulated synthetic filter cells, along with a wide range of rigid pocket cells, absolute filters, automatic filters, electrostatic and active carbon filters with high and extremely high efficiency levels;
- ▶ static, rotary, run-around heat recovery systems;
- ▶ heat exchanger coils using water, direct expansion, steam, diathermal oil, electricity with 4 types of pitch versions, fins and several pipe and fin thicknesses;
- ▶ water gravity humidifying systems with pack or pump, water, compressed air, steam and air washer versions;
- ▶ aluminium or stainless steel condensate collection trays inside the panelling, insulated and tilted towards the drain;
- ▶ DIDW quality fans, with forward impeller, reversed or with a wing profile and plug-type fans;
- ▶ noise-reduction sections.

Dedicated units for use in hospitals, food and electronic industries, clean rooms, etc.

functions and features



Heating-Cooling



Indoor inst.

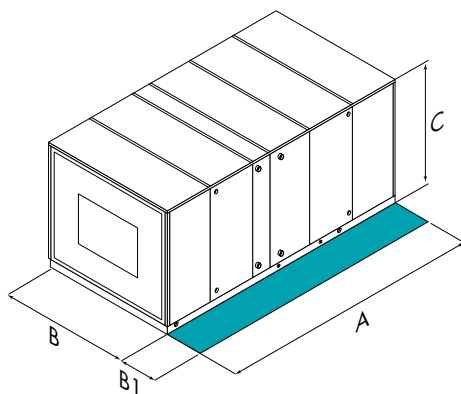


Outdoor inst.



Free-cooling

dimensions and clearances



Sizes - AQX		1	2	3	4	5	6	7	8	9	10	11
A - Length	mm	(*)										
B - Width	mm	770	820	920	870	920	1020	970	1020	1170	1120	1220
C - Height (***)	mm	570	570	620	720	720	720	820	820	820	920	920
B1 - Servicing space												
for inspection	mm	800	800	800	800	800	800	800	800	800	800	800
coil removal	mm	964	1034	1024	1024	1094	1187	1194	1214	1324	1284	1394
Weight in oper	kg	(**)										

Sizes - AQX		12	13	14	15	16	17	18	19	20	21	22
A - Length	mm	(*)										
B - Width	mm	1220	1370	1370	1570	1570	1620	1770	1820	2070	2120	2220
C - Height (***)	mm	1070	1070	1170	1170	1320	1420	1420	1520	1520	1670	1770
B1 - Servicing space												
for inspection	mm	800	800	800	800	800	800	800	800	800	800	800
coil removal	mm	1524	1504	1574	1734	1744	1774	1894	2094	2324	2264	2524
Weight in oper	kg	(**)										

Sizes - AQX		23	24	25	26	27	28	29	30	31	32
A - Length	mm	(*)									
B - Width	mm	2370	2470	2620	2820	3170	3570	4020	4570	5170	5870
C - Height (***)	mm	1920	2020	2120	2270	2270	2270	2270	2270	2270	2270
B1 - Servicing space											
for inspection	mm	800	800	800	800	800	800	800	800	800	800
coil removal	mm	2524	2594	2744	3074	3444	3874	4364	4924	5564	6304
Weight in oper	kg	(**)									

(*) Length A depends on the specific configuration.

(**) Operating weight depends on the specific configuration.

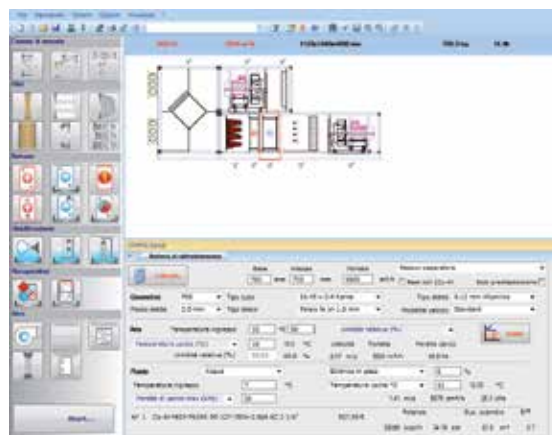
(***) Height without base. Standard base = 140 mm

The above data refer to standard units.

CAUTION! For trouble-free operation of the unit it is essential to maintain the clearances in green.

versions and configurations

The air-handling units of the AQX series are selected with special software that allows the units to be sized and executive drawings, technical data sheets and the bill of main components and materials used to be issued as from the proposal phase.



technical data

Size - AQX		1	2	3	4	5	6	7	8	9	10	11
Air flow	(1) l/s	414	473	544	624	714	816	938	1073	1223	1404	1602

Size - AQX		12	13	14	15	16	17	18	19	20	21	22
Air flow	(1) l/s	1838	2111	2412	2760	3159	3630	4156	4752	5445	6245	7156

Size - AQX		23	24	25	26	27	28	29	30	31	32
Air flow	(1) l/s	8190	9383	10751	12315	14101	16167	18513	21191	24276	27821

Notes:

(1) Air passage speed on the heat exchange coils 2.5 m/s

accessories

The air treatment units of the AQX series are available with a vast range of accessories that can be selected directly with the selection software.

A few of the most common accessories are listed below:

- ▶ Weatherproof roof and control protection technical compartment
- ▶ Weatherproof covers on the external air inlets and outlets
- ▶ Safety device for moving components
- ▶ Spotlights and viewing panel
- ▶ Inverters on the fan motors

Other accessories not found in the basic selection can be assessed on request.

Air conditioning unit

For the air treatment

At modular sections

Indoor and outdoor installation

Air flow from 350 to 44400 l/s



ErP compliant

The **CLA** air-handling units feature:

- ▶ basic modular series developed on 32 standard sizes with constant coverage from 2.2 m/s to 2.52 m/s;
- ▶ the high level of engineering of the CLA series allows, along with the 32 standard sizes, to set different frontal dimensions in order to meet specific size requirements for construction sites and handling needs, with a 50 mm pitch both in terms of height and depth;
- ▶ aluminium alloy frame with an exclusive design;
- ▶ thermal cut as standard on sections and joints between sections;
- ▶ concealed intermediate sections;
- ▶ thermally cut sandwich buffer panels, 50mm thick with thermoacoustic insulation made with injected polyurethane (40 kg/m³) or mineral wool (90 kg/m³);
- ▶ the internal and external sheet metal of the panels can be selected among 7 types of material with different thicknesses;
- ▶ handles for inspection doors that can also be opened from the inside;
- ▶ absolutely smooth internal surfaces to minimise dust deposits and make cleaning and disinfection easier;
- ▶ antivibration bellow supplied as standard on the fans' intake;
- ▶ the CLA units can be equipped with a vast array of filtering solutions starting from simple G2 undulated synthetic filter cells, along with a wide range of rigid pocket cells, absolute filters, automatic filters, electrostatic and active carbon filters with high and extremely high efficiency levels;
- ▶ static, rotary, run-around heat recovery systems;
- ▶ heat exchanger coils using water, direct expansion, steam, diathermal oil, electricity with 4 types of pitch versions, fins and several pipe and fin thicknesses;
- ▶ water gravity humidifying systems with pack or pump, water, compressed air, steam and air washer versions;
- ▶ aluminium or stainless steel condensate collection trays inside the panelling, insulated and tilted towards the drain;
- ▶ DIDW quality fans, with forward impeller, reversed or with a wing profile and plug-type fans;
- ▶ noise-reduction sections.

Dedicated units for use in hospitals, food and electronic industries, clean rooms, etc.

functions and features



Heating-Cooling



Indoor inst.

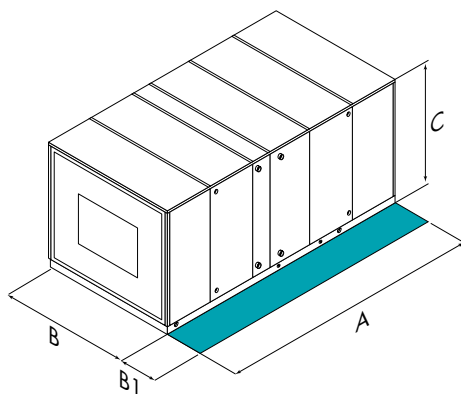


Outdoor inst.



Free-cooling

dimensions and clearances



Sizes - CLA		1	2	3	4	5	6	7	8	9	10	11
A - Length	mm	(*)										
B - Width	mm	770	820	920	870	920	1020	970	1020	1170	1120	1220
C - Height	mm	570	570	620	720	720	720	820	820	820	920	920
B1 - Servicing space												
for inspection	mm	800	800	800	800	800	800	800	800	800	800	800
coil removal	mm	964	1034	1024	1024	1094	1187	1194	1214	1324	1284	1394
Weight in oper	kg	(**)										

Sizes - CLA		12	13	14	15	16	17	18	19	20	21	22
A - Length	mm	(*)										
B - Width	mm	1220	1370	1370	1570	1570	1620	1770	1820	2070	2120	2220
C - Height	mm	1070	1070	1170	1170	1320	1420	1420	1520	1520	1670	1770
B1 - Servicing space												
for inspection	mm	800	800	800	800	800	800	800	800	800	800	800
coil removal	mm	1524	1504	1574	1734	1744	1774	1894	2094	2324	2264	2524
Weight in oper	kg	(**)										

Sizes - CLA		23	24	25	26	27	28	29	30	31	32
A - Length	mm	(*)									
B - Width	mm	2370	2470	2620	2820	3170	3570	4020	4570	5170	5870
C - Height	mm	1920	2020	2120	2270	2270	2270	2270	2270	2270	2270
B1 - Servicing space											
for inspection	mm	800	800	800	800	800	800	800	800	800	800
coil removal	mm	2524	2594	2744	3074	3444	3874	4364	4924	5564	6304
Weight in oper	kg	(**)									

(*) Length A depends on the specific configuration.

(**) Operating weight depends on the specific configuration.

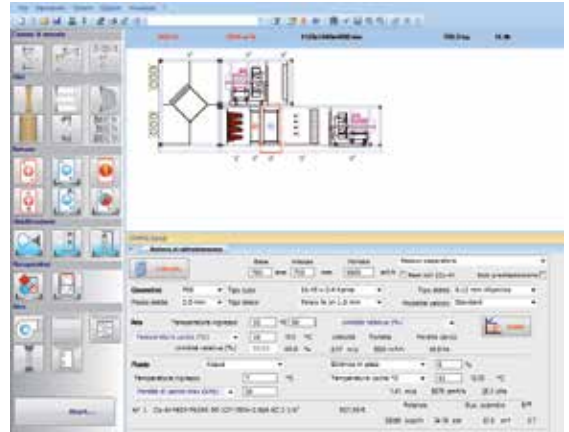
(***) Height without base. Standard base = 140 mm

The above data refer to standard units.

CAUTION! For trouble-free operation of the unit it is essential to maintain the clearances in green.

versions and configurations

The air-handling units of the CLA series are selected with special software that allows the units to be sized and executive drawings, technical data sheets and the bill of main components and materials used to be issued as from the proposal phase.



technical data

Size - CLA		1	2	3	4	5	6	7	8	9	10	11
Air flow	(1) l/s	414	473	544	624	714	816	938	1073	1223	1404	1602

Size - CLA		12	13	14	15	16	17	18	19	20	21	22
Air flow	(1) l/s	1838	2111	2412	2760	3159	3630	4156	4752	5445	6245	7156

Size - CLA		23	24	25	26	27	28	29	30	31	32
Air flow	(1) l/s	8190	9383	10751	12315	14101	16167	18513	21191	24276	27821

Notes:

(1) Air passage speed on the heat exchange coils 2.5 m/s

accessories

The air treatment units of the CLA series are available with a vast range of accessories that can be selected directly with the selection software.

A few of the most common accessories are listed below:

- ▶ Weatherproof roof and control protection technical compartment
- ▶ Weatherproof covers on the external air inlets and outlets
- ▶ Safety device for moving components
- ▶ Spotlights and viewing panel
- ▶ Inverters on the fan motors

Other accessories not found in the basic selection can be assessed on request.

AUXILIARY System

	Small and Medium Commercial	
		
	POWERDuct	
	Outdoor unit	Indoor unit
Capacities	7 ÷ 25 kW	7 ÷ 25 kW
Products		
 Air source Heat pumps Full Inverter DC	MSAN-XMi	CN-XMi

	CONDENSING UNITS	
	Outdoor unit	
Capacities	26 ÷ 80 kW	
Products		
 Air source Cooling only	MSAT-XEE	

Small and Medium Commercial



ROOMPack

10 ÷ 75 kW



Capacities

Products



CAS-X
(cooling only)



CASR-X
(cooling only)

Commercial and Industrial

REMOTE CONDENSERS

10 ÷ 267 kW

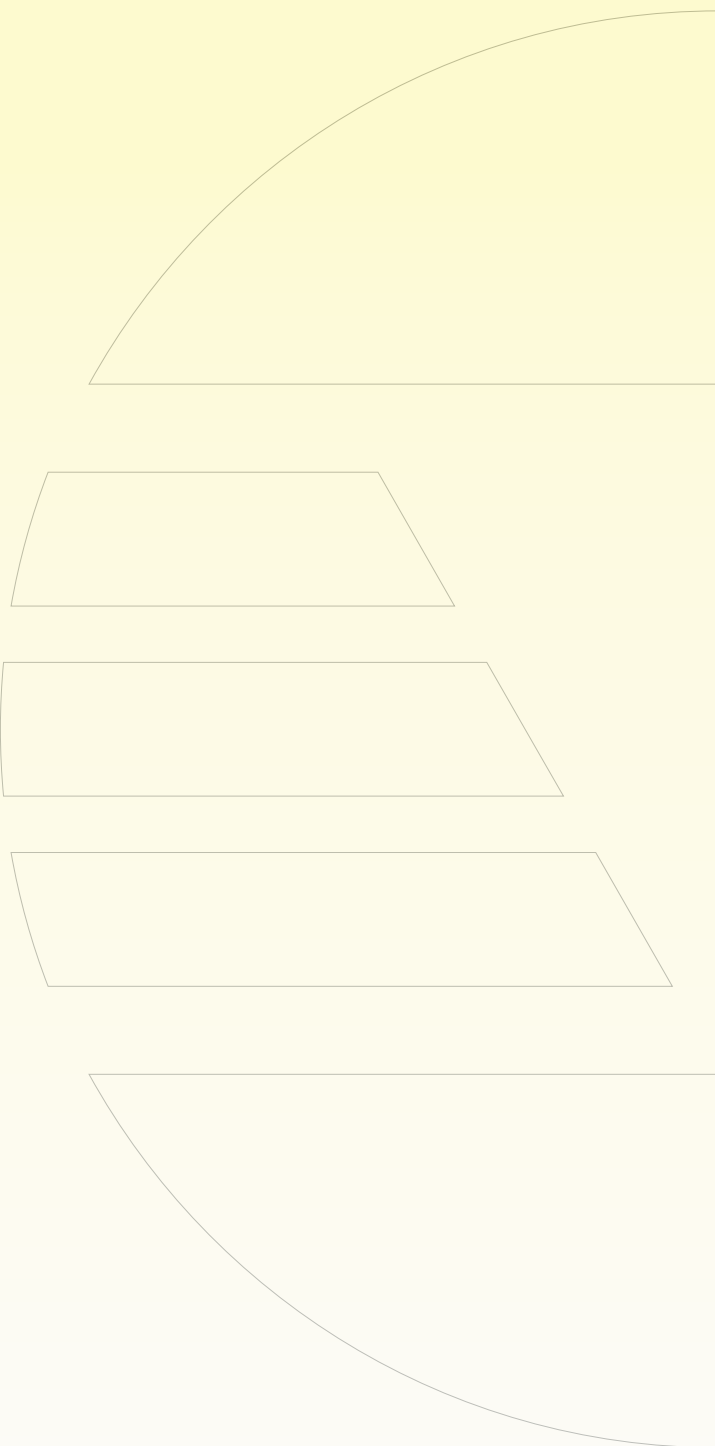


Products



R-410A

CE-X



AUXILIARY System

System components

series	size	from	to	name	page
Split system - air source					
S-XMi (MSAN-XMi + CN-XMi)	D71		D250	POWERDuct	178
Condensing units - air source - axial fans					
MSAT-XEE	8.2		30.2		180
Autonomous air-conditioners / Condenserless					
CASR-X	31		222	ROOMPack	182
Autonomous air-conditioners - water source					
CAS-X	31		222	ROOMPack	182
Remote condensers					
CE-X	25		452		184



Reversible heat pump
Air cooled
Capacity from 7 to 25 kW

POWERDuct



CLIVET PowerDuct S-XMi is the most versatile solution for systems with two sections.

Available in the version with the reversible heat pump, it is ideal for air conditioning in offices, banks, shops of small-medium size etc.

The **MSAN-XMi** unit is the **external part** of the system with a compressor controlled by an inverter and fans with a DC motor with pressure switch control to follow any variation in the required thermal loads with precision.

CN-XMi is the **internal unit** for horizontal-ducted installation and can be easily placed in a false ceiling. It is **complete with electronic expansion valve and DC fan**.

The user interface, to be placed in the room, allows you complete control of the entire system and includes a wide screen with icons that allow easy, straightforward adjustment.



functions and features



Heat pump



Air cooled



R-410A

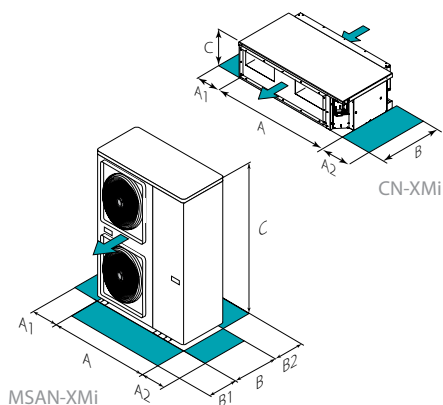


Full Inverter DC



Electronic expansion valve

dimensions and clearances



Size – CN-XMi		D71	D90	D112	D160	D200	D250
A - Length	mm	952	952	952	1300	1443	1443
B - Width	mm	690	690	690	690	810	810
C - Height	mm	420	420	420	420	470	470
A1	mm	500	500	500	500	500	500
A2	mm	600	600	600	600	600	600
Operating weight	kg	41	47	47	70	108	108

Size – MSAN-XMi		80M	105M	120T	160T	200T	260T
A - Length	mm	1075	1075	900	900	1120	1120
B - Width	mm	396	396	400	400	528	528
C - Height	mm	966	966	1327	1327	1558	1558
A1	mm	300	300	300	300	300	300
A2	mm	600	600	600	600	600	600
B1	mm	2000	2000	2000	2000	3000	3000
B2	mm	300	300	300	300	300	300
Operating weight	kg	75	75	95	102	137	147

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

technical data

Size – S-XMi			D71	D90	D112	D160	D200	D250
▶ Cooling capacity	(1)	kW	7,1 (1,5~8)	9 (2~10)	11,2 (2,5~13)	15,8 (3~17)	20 (4~22)	25 (5,5~27)
Sensible capacity	(1)	kW	5,8	6,8	8,5	12,0	15,1	18,9
Power input ⁽¹⁾	(1)	kW	2,0	2,5	3,6	5,1	6,9	8,4
EER	(1)	-	3,53	3,57	3,12	3,08	2,90	2,99
Energy Efficiency Class	(4)	-	A	A	-	-	-	-
▶ Heating capacity	(2)	kW	7, 6 (1,5~8,5)	9,4 (2~10,5)	12,9 (2,5~14)	17 (3,5~18,5)	22,1 (4,5~24)	28,1 (6~31)
Power input ⁽¹⁾	(2)	kW	2,0	2,3	3,9	5,2	6,9	7,6
COP	(2)	-	3,80	4,14	3,33	3,26	3,21	3,72
Energy Efficiency Class	-	-	A	A	-	-	-	-
Outdoor unit MSAN-XMi			80M	105M	120T	160T	200T	260T
Power supply		V/Ph/Hz	230/1/50		400/3/50			
No of compressors	-	-	1					
Compressor Type	-	-	TWIN ROTARY DC					
No of supply fans	-	-	1		2			
Fan Motor Type	-	-	DC		DC+DC			
Sound Pressure Level	(4)	dB(A)	56	57	57	57	59	60
Indoor unit CN-XMi			D71	D90	D112	D160	D200	D250
Power supply		V/Ph/Hz	230/1/50					
Fan Type	-	-	CFG					
No of supply fans	-	-	1					
Airflow rate		m3/h	1390	1650	1930	2660	4660	4760
Max Ext Static Pressure	(3)	Pa	196	196	196	196	200	200
Sound Pressure Level	(5)	dB(A)	44	47	47	52	53	53

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Cooling and Heating performance data referring to the coupling between the MSAN-XMi outdoor unit and the CN-XMi indoor unit of the same size.

Equivalent pipe length = 7.5 m; height difference outdoor unit-indoor unit = 0 m

(1) Performance in Cooling: ambient air 27°C D.B./19°C W.B., air entering outdoor heat exchanger 35°C D.B./24°C W.B.

(2) Performance in Heating: ambient air 20°C D.B./15°C W.B., air entering outdoor heat exchanger 7°C D.B./6°C W.B.

(3) Maximum net static pressure available to make up for any pressure drop in delivery and return.

(4) Sound level calculated at 1 m from the air outlet and 1 m above the floor

(5) Sound level calculated at 1.4m below the center of the unit

accessories

- **CDPX** Condensate discharge pump
- **RM12AX** RM12A infrared remote control
- **KJR86CX** KJR86C simplified electronic room control for wall installation
- **KJR120CX** KJR120C electronic room control for wall installation with weekly scheduling
- **KJR150X** Indoor units group controller

Key to symbols:

- Accessories separately supplied

- **CCM15X** Data converter management with Cloud, up to 64 units
- **LONGWX** LONWORKS protocol converter
- **CCM08X** BACNET protocol converter
- **CCM18UX** MODBUS protocol converter up to 16 units
- **KNXX** KNX protocol converter of a single unit
- **CCM18X** MODBUS protocol converter up to 64 units

Condensing unit

Cooling only

Air cooled

Outdoor installation

Capacity from 26 to 80 kW



The **MSAT-XEE** air-cooled condensing units have been designed for outdoor installation and for best energy efficiency in relation to reduced size. They may be combined with terminal units or connected to exchanger coils of air-handling units.

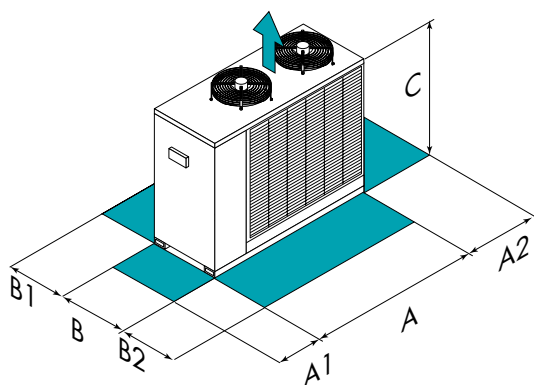
The main features are:

- **HIGH ENERGY EFFICIENCY**, especially during operation at partial loads, thanks to the use of two compressors of different capacity operating on a single cooling circuit;
- **SELF-ADAPTING** - The evolved electronics implemented adapt the operating parameters to the load conditions of the system it is installed in, optimising consumption, noise and the working life of the components;
- **COMPACT SIZE** - The units are designed to reduce overall dimensions to a minimum, a decisive factor to adapt to the features of any building.

functions and features



dimensions and clearances



CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size - MSAT-XEE		8.2	10.2	12.2	16.2	18.2	22.2	26.2	30.2
A - Length	mm	1739	1739	1739	1967	1967	1967	2367	2367
B - Width	mm	721	721	721	1143	1143	1143	1141	1141
C - Height	mm	1287	1287	1287	1599	1599	1599	1593	1593
A1	mm	700	700	700	700	700	700	700	700
A2	mm	700	700	700	700	700	700	700	700
B1	mm	700	700	700	700	700	700	700	700
B2	mm	700	700	700	700	700	700	700	700
Operating weight	kg	298	303	323	456	469	490	547	561

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

technical data

Size – MSAT-XEE			8.2	10.2	12.2	16.2	18.2	22.2	26.2	30.2
▶ Cooling capacity	(1)	kW	25,7	31,3	36,0	43,4	51,6	59,1	72,3	80,1
Compressor power input	(1)	kW	8,79	9,95	12,4	14,1	16,2	20,3	22,6	26,6
Total power input	(1)	kW	9,20	10,4	12,9	15,6	17,7	21,8	24,2	28,4
EER	(1)	-	2,78	3,01	2,80	2,78	2,91	2,71	2,99	2,82
Refrigeration circuits	Nr		1							
No. of compressors	Nr		2							
Type of compressors	-		SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
Standard airflow	l/s		2553	2545	2514	4965	4902	4778	7196	6971
Standard power supply	V		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Sound pressure level	(2)	dB(A)	60	60	60	64	64	65	65	65

Notes

- (1) Saturated suction temperature (SST) = 5°C; Outdoor air temperature 35°C
 (2) The sound levels refer to the unit at full load, in the rated test conditions.
 The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field.

accessories

- **KCX** Connection set
- **HGBP** Hot gas by pass
- **AMRX** Rubber antivibration mounts
- **PGCEX** Coil protection grilles outdoor air side
- **PM** Phase monitor
- **PMX** Phase monitor
- **RCTX** Remote control
- **MEN30** Minimum outdoor air temperature down to -30°C
- **MEN15** Minimum outdoor air temperature down to -15°C

Key to symbols:

- Accessories separately supplied

Packaged air-conditioning unit

Cooling only

CAS-X: Water cooled

CASR-X: Condenserless

Vertical indoor installation

Ductable

Capacity from 10 to 75,7 kW



THTUNE command and control keypad

Main functions:

- temperature and humidity measurement through built-in probes
- unit on/off
- unit main information
- ventilation-only setting
- daily/weekly programming
- temperature set-point modification
- humidity set-point modification



ErP compliant

ROOMPack

The **autonomous** air conditioners **CAS-X** and **CASR-X** are **vertical indoor units** that automatically cool all year round.

The numerous combinations of versions and accessories make the unit easy to install in **technical rooms, service areas** like closets or warehouses and **directly in the area** to be airconditioned.

Thanks to the Scroll compressors, to the electronic expansion valve, to the electronically controlled fan these units stand out for their **high efficiency in every operating condition** and for their **reliability**.

The installation is easy too thanks to the **specific hydraulic pipe works** available for the different solutions. These are supplied already mounted and tested in the unit for the water cooled units CAS-X.

The CASR-X units have been studied, on the other hand, to be connected with the remote condensers type CE-X.

functions and features



Cooling only



Water cooled (CAS-X)



Remote condenser (CASR-X)



Indoor installation



R-410A



Hermetic Scroll



Electronically commutated Plug Fan

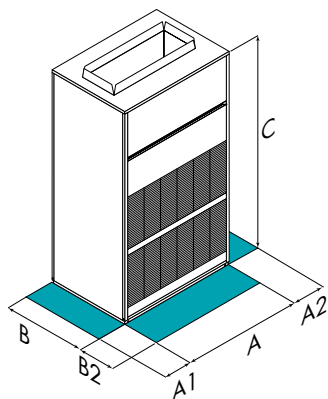


Electronic expansion valve



Constant Air Volume

dimensions and clearances



Size – CAS-X		31	41	51	61	71	81	82	102	122	162	182	222
A - Length	mm	850	850	850	1050	1050	1050	1050	1050	1450	1450	1850	1850
B - Width	mm	510	510	510	510	510	510	780	780	780	780	780	780
C - Height	mm	1705	1705	1705	1705	1705	1705	2000	2000	2000	2000	2000	2000
A1	mm	400	400	400	400	400	400	400	400	400	400	400	400
A2	mm	400	400	400	400	400	400	400	400	400	400	400	400
B2	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Operating weight	kg	178	179	188	207	208	210	310	315	400	410	490	500

Size – CASR-X		31	41	51	61	71	81	82	102	122	162	182	222
A - Length	mm	850	850	850	1050	1050	1050	1050	1050	1450	1450	1850	1850
B - Width	mm	510	510	510	510	510	510	780	780	780	780	780	780
C - Height	mm	1705	1705	1705	1705	1705	1705	2000	2000	2000	2000	2000	2000
A1	mm	400	400	400	400	400	400	400	400	400	400	400	400
A2	mm	400	400	400	400	400	400	400	400	400	400	400	400
B2	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Operating weight	kg	173	175	181	200	200	202	297	302	387	392	472	482

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

AIRFLOW (CAS-X ONLY):

- **SM** Standard air outlet flow-rate (Standard)
- **RM** Reduced air outlet flow-rate

► HM

Supply air flow rate High

technical data

Size – CAS-X			31	41	51	61	71	81	82	102	122	162	182	222	
▶ Cooling capacity	(1)	kW	10,8	12,4	16,0	17,5	20,0	24,8	34,3	39,3	48,1	56,3	66,2	75,7	
Sensible capacity	(1)	kW	8,30	9,80	12,6	13,8	15,0	18,4	27,7	30,8	38,5	45,8	53,3	58,8	
Compressor power input	(1)	kW	1,97	2,30	3,09	3,63	3,83	4,96	6,39	7,44	9,18	10,2	12,2	14,6	
EER	(1)	-	5,48	5,40	5,18	4,82	5,22	5,00	5,37	5,28	5,24	5,52	5,43	5,18	
SEER	(6)	-	3,61	3,60	3,59	3,36	3,68	3,58	4,58	4,24	4,64	4,56	4,74	4,41	
No. of compressors		Nr	1						2						
Type of compressors	(2)	-	SCROLL												
Supply airflow		l/s	569	778	889	1056	1167	1250	1944	2222	2778	3194	3611	4167	
Type of supply fan	(3)	-	RAD												
Number of supply fans		Nr	1						2						
Max. static pressure supply fan	(4)	Pa	700	460	275	365	240	120	450	340	240	540	510	400	
Standard power supply		V	400/3~/50												
Sound pressure level		dB(A)	53	55	57	59	61	63	60	63	59	61	63	65	
Size – CASR-X			31	41	51	61	71	81	82	102	122	162	182	222	
▶ Cooling capacity	(5)	kW	9,80	11,3	14,6	16,0	18,3	22,9	30,5	34,1	43,5	49,6	58,9	68,7	
Sensible capacity	(5)	kW	7,90	9,20	11,8	13,1	13,9	17,6	26,1	29,3	36,9	42,3	48,7	55,6	
Compressor power input	(5)	kW	2,50	2,90	3,70	4,50	4,80	6,10	8,50	10,1	11,6	13,3	15,5	18,7	
EER	(5)	-	3,87	3,87	3,93	3,57	3,81	3,76	3,60	3,38	3,76	3,74	3,79	3,68	
No. of compressors		Nr	1						2						
Type of compressors	(2)	-	SCROLL												
Supply airflow		l/s	569	778	889	1056	1167	1250	1944	2222	2778	3194	3611	4167	
Type of supply fan	(3)	-	RAD												
Number of supply fans		Nr	1						2						
Max. static pressure supply fan	(4)	Pa	700	460	275	365	240	120	450	340	240	540	510	400	
Standard power supply		V	400/3~/50												
Sound pressure level		dB(A)	53	55	57	59	61	63	60	63	59	61	63	65	

Notes

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

- (1) Ambient air 27°C D.B./19°C W.B. Exchanger water temperature 30°C / 35°C
- (2) SCROLL = scroll compressor
- (3) RAD = radial fan

- (4) Net outside static pressure to win the outlet and intake onboard pressure drops
- (5) Ambient air at 27°C D.B./19°C W.B. Condensing temperature = 50°C; Performance not including fan motor capacity; EERc referred only to compressors.
- (6) Data calculated according to the EN 14825:2016 Regulation.

accessories

- **EVE** Electronic expansion valves
- **R4** Rear air inlet
- **R3** Downward air return
- **MP** Rear supply air
- **PF500X** Front air supply plenum H=500mm
- **PO3X** Air supply plenum on three sides (sizes 31÷81)
- **PCOSM** Constant supply airflow
- **PSAF** Differential pressure switch for dirty air filters
- **CHW2** Two-rows hot water coil
- **3WVM** Modulating three-way valve (sizes 82÷222)
- **3WVPX** Modulating three-way valve (sizes 31÷81)
- **EH17** 18 kW electric heaters (sizes 61÷222)
- **EH22** 27 kW electric heaters (sizes 82÷222)
- **EH09** 4,5 kW electric heaters (sizes 31÷81)
- **EH10** 6 kW electric heaters (sizes 31÷81)
- **EH12** 9 kW electric heaters (sizes 31÷81)
- **CPHG** Hot gas re-heating coil (sizes 82÷222)
- **CONTE** Electronic room control with display visible on the unit
- **CIWM** Electronic room control with display, for wall installation in built-in box
- **CTEM** Temperature ambient control with built-in probe
- **CSOND** Temperature and humidity ambient control with built-in probes

- **MOB** Serial port RS485 with Modbus protocol
- **CMSLWX** LonWorks serial communication module
- **BACX** BACnet serial communication module
- **PM** Phase monitor
- **PFCP** Power factor correction capacitors (cosfi > 0.9)
- **AMRX** Rubber antivibration mounts
- **MHP** High and low pressure gauges
- **CUE** External humidifier control with 0-10V command

CAS-X only:

- **MIPC** Hydraulic pipework arrangement for loop with constant flow rate with manual valves
- **MIPV** Hydraulic pipework arrangement for loop with variable flow rate with 2 way ON-OFF valve
- **MIPM** Hydraulic pipework arrangement for loop with disposable water system with 2-way modulating valve
- **IFWX** Steel mesh strainer on the water side
- **ACIS** Antifreeze heater protection on the water side exchanger
- **EH14** 12 kW electric heaters (sizes 31÷162)
- **EH24** 36 kW electric heaters (sizes 182÷222)

CASR-X only:

- **EH14** 12 kW electric heaters (sizes 82÷162)
- **EH24** 36 kW electric heaters (sizes 82÷222)

Key to symbols:

- Accessories separately supplied

Remote condenser

Air cooled

Outdoor installation

Capacity from 10 to 267 kW

The **CE-X** remote air-cooled condensers can be matched to **CASR-X** Clivet units for indoor installation and they can also be connected to other motor-evaporating units.

They are available in two acoustic configurations, **Standard (ST)** and **Low Noise (LN)**, to fulfil also the the most severe project requirements respecting the sound levels required. They use axial fans extremely silent and with high heat exchange efficiencies, housed inside aerodynamic conveyors. Thanks to optional devices for the fan speed control, phase cutting or ECOBREEZE type, is possible to increase the energy savings of the entire system, to optimize the combined unit operation and to further increase the silence.

All units respect the high quality standards that Clivet guarantees with severe tests during the entire production cycle.

functions and features

Cooling only



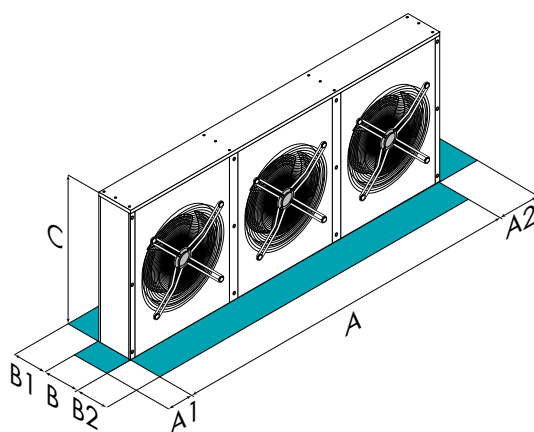
Remote condenser



Outdoor installation



R-410A

dimensions and clearances

CAUTION! For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size – CE-X		25	31	41	51	61	71	91	101	121	141	161	181	201
OUTV	A - Length	mm	1180	1180	1180	1854	1830	1830	1855	1883	1883	2688	2688	2688
OUTV	B - Width	mm	530	530	530	530	530	530	503	595	595	595	595	595
OUTV	C - Height	mm	585	585	585	585	585	585	735	1170	1170	1215	1215	1215
OUTV	A1	mm	700	700	700	700	700	700	700	700	700	700	700	700
OUTV	A2	mm	300	300	300	300	300	300	300	300	300	300	300	300
OUTV	B1	mm	555	555	555	555	555	555	705	1110	1110	1155	1155	1155
OUTV	B2	mm	550	550	550	550	550	550	800	800	800	800	800	800
ST	Operating weight	kg	35	45	52	65	75	90	90	110	110	150	155	190
LN	Operating weight	kg	35	45	52	65	75	90	90	110	110	150	155	190

Size – CE-X		222	262	302	362	402	452
OUTV	A - Length	mm	2470	2470	3820	3820	5170
OUTV	B - Width	mm	752	752	752	752	752
OUTV	C - Height	mm	1430	1430	1430	1430	1430
OUTV	A1	mm	700	700	700	700	700
OUTV	A2	mm	300	300	300	300	300
OUTV	B1	mm	1360	1360	1360	1360	1360
OUTV	B2	mm	800	800	800	800	800
ST	Operating weight	kg	241	265	354	393	521

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

OUTV Vertical cased version

ST Standard (ST)

LN Low noise (LN)

versions and configurations

ACOUSTIC CONFIGURATION:

- **ST** Standard acoustic configuration (Standard)
- **LN** Low noise acoustic configuration

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

- **-** Device for fan consumption reduction of the external section: not required (Standard)
- **CREFP** Device for fan consumption reduction of the external section at variable speed (phase-cutting)
- **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type

technical data

Size – CE-X				25	31	41	51	61	71	91	101	121	141	161	181	201
ST	Heat rejection capacity	(3)	kW	10,0	11,9	13,6	18,1	21,2	24,9	29,2	33,3	39,9	52,1	58,2	70,1	84,8
ST	Fan power input	(1)	kW	0,15	0,15	0,15	0,30	0,45	0,45	0,60	0,60	0,60	1,56	1,61	1,67	1,72
ST	Standard airflow		l/s	1039	961	910	1956	2538	2150	2542	3911	3707	6617	6488	6195	5981
LN	Heat rejection capacity		kW	7,30	8,50	9,60	13,5	16,1	18,8	21,6	25,3	29,3	38,1	41,8	46,9	54,3
LN	Fan power input	(1)	kW	0,12	0,12	0,12	0,24	0,37	0,37	0,37	0,49	0,49	0,56	0,56	0,57	0,57
LN	Standard airflow		l/s	639	606	577	1233	1614	1413	1615	2467	2343	3981	3849	3509	3290
ST	Sound pressure level	(2)	dB(A)	56	55	55	58	59	57	59	61	61	64	64	63	63
LN	Sound pressure level	(2)	dB(A)	43	43	42	46	46	45	46	49	48	58	58	58	58
Standard power supply			V	230/1~/50								400/3~/50				
Size – CE-X				222		262		302		362		402		452		
ST	Heat rejection capacity	(3)	kW	82,8		120		132		176		247		267		
ST	Fan power input	(1)	kW	3,20		3,20		4,60		4,80		6,40		6,50		
ST	Standard airflow		l/s	11667		11389		17917		17083		22778		22222		
LN	Heat rejection capacity	(3)	kW	74,3		106		118		152		211		226		
LN	Fan power input	(1)	kW	2,10		2,20		3,10		3,30		4,40		4,50		
LN	Standard airflow		l/s	9722		9444		14583		13750		18333		17778		
ST	Sound pressure level	(2)	dB(A)	69		68		72		71		73		73		
LN	Sound pressure level	(2)	dB(A)	64		63		67		66		69		69		
Standard power supply			V	400/3/50												

Notes

Erp (Energy Related Products) European Directive, that includes the Commission delegated Regulation (EU) No 2016/2281 also known as Ecodesign Lot21, does not report this Product category.

- (1) Standard fans at nominal operating conditions
- (2) The sound levels refer to the unit at full load, in the rated test conditions.
The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field.

(3) Data referred to 30°C outdoor air temperature and 45°C condensation temperature. Data referred to 25°C de-superheating temperature of and 5°C sub-cooling temperature.

- ST Standard (ST)
- LN Low noise (LN)

accessories

- **LRX** Liquid receiver kit (sizes 25÷362)
- **WKX** Winter kit (sizes 25÷362)

- **FAVX** Vertical airflow

Key to symbols:

- Accessories separately supplied

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Clivet, in compliance with Regulation 517/2014, informs that its products contain or function with the use of fluorinated greenhouse gases: R-410A (GWP 2087,5), R-134a (GWP 1430) and R-407C (GWP 1773,85).

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